As filed with the Securities and Exchange Commission on September 16, 2021.

Registration Statement No. 333 -258741

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Amendment No. 1

FORM F-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

XORTX THERAPEUTICS INC.
(Exact name of registrant as specified in its charter)

British Columbia	**2834**	**N/A**
(State or other jurisdiction of incorporation or organization)	**(Primary Standard Industrial Classification Code Number)**	**(I.R.S. Employer Identification No.)**

Suite 4000, 421 – 7th Avenue SW
Calgary, Alberta, Canada T2P 4K9
(403) 455-7717
(Address, including zip code and telephone number, including area code, of registrant's principal executive offices)

TSX Trust Company
100 Adelaide Street West, Suite 301
Toronto, Ontario, Canada M5H 4H1
(416) 342-1091
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

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Approximate date of commencement of proposed sale to the public: As soon as practicable after this Registration Statement becomes effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. ☐

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act.

Emerging growth company ☒

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.† ☒

† The term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities To Be Registered	Proposed Maximum Aggregate Offering Price(1)(2)		Amount of Registration Fee	
Units consisting of:				
Common shares, without par value[4]				
Warrants to purchase common shares and common shares issuable upon the exercise thereof	US$	17,250,000 [7]	US$	1,881.97
Units consisting of:				
Pre-funded warrants to purchase common shares and common shares issuable upon exercise thereof[3][4]				
Warrants to purchase common shares and common shares issuable upon the exercise thereof				
Underwriter's warrants to purchase common shares and common shares issuable upon the exercise thereof[5]	US$	862,500	US$	94.10
Total[6]	US$	18,112,500	US$	1,976.07

(1) Estimated solely for the purpose of determining the amount of registration fee in accordance with Rule 457(o) under the Securities Act. Includes the offering price attributable to additional shares that the underwriters have the option to purchase to cover over-allotments, if any.

(2) Calculated pursuant to Rule 457(o) under the Securities Act, based on an estimate of the proposed maximum aggregate offering price.

(3) The proposed maximum aggregate offering price of the common stock proposed to be sold in the offering will be reduced on a dollar-for-dollar basis based on the aggregate offering price of the pre-funded warrants offered and sold in the offering (plus the aggregate exercise price of the common stock issuable upon exercise of the pre-funded warrants), and as such the proposed aggregate maximum offering price of the common stock and pre-funded warrants (including the common stock issuable upon exercise of the pre-funded warrants), if any, is US$17,250,000.

(4) In accordance with Rule 416(a), we are also registering an indeterminate number of additional common shares that shall be issuable pursuant to Rule 416 to prevent dilution resulting from share splits, share dividends or similar transactions.

(5) The Registrant will issue to the underwriters warrants to purchase a number of common shares equal to an aggregate of 5.0% of the common shares and/or pre-funded warrants sold in the offering. The exercise price of the underwriters' warrants is equal to 110% of the offering price of the common shares and/or pre-funded warrants offered hereby. The underwriters' warrants are exercisable beginning six months from the effective date of the offering, from time to time, in whole or in part, within five years commencing from the effective date of the offering.

(6) US$1,882.00 of the US$1,976.07 was previously paid.

(7) Includes up to $2,250,000 of common shares and/or common share purchase warrants that are subject to the underwriter's option to purchase additional securities.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and we are not soliciting offers to buy these securities in any state where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED SEPTEMBER 16, 2021

PRELIMINARY PROSPECTUS

2,500,000 Common Shares,

Pre-Funded Warrants to Purchase

2,500,000 Common Shares and Warrants to Purchase

2,500,000 Common Shares

XORTX Therapeutics Inc.

We are offering 2,500,000 common shares, no par value, and warrants ("Common Share Purchase Warrants") to purchase 2,500,000 common shares pursuant to this prospectus. Each whole Common Share Purchase Warrant is exercisable to purchase one common share at an assumed exercise price of US$ 6.00, will be exercisable upon issuance and will expire five years from the date of issuance. The common shares and Common Share Purchase Warrants will be issued and sold to purchasers in the ratio of one-to-one. Common Share Purchase Warrants will be issued in book-entry form pursuant to a warrant agency agreement between us and Continental Stock Transfer & Trust Company as warrant agent. This prospectus also relates to the offering of the common shares issuable upon exercise of Common Share Purchase Warrants.

We are also offering to certain purchasers whose purchase of common shares in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common shares immediately following the consummation of this offering, the opportunity to purchase, if any such purchaser so chooses, pre-funded warrants, in lieu of common shares that would otherwise result in such purchaser's beneficial ownership exceeding 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common shares. Each pre-funded warrant will be exercisable for one common share. The exercise price of each pre-funded warrant will be US$0.0001 per common share. The pre-funded warrants will be immediately exercisable and may be exercised at any time until all of the pre-funded warrants are exercised in full. This offering also relates to the common shares issuable upon exercise of any pre-funded warrants sold in this offering.

The common shares and the accompanying Common Share Purchase Warrants will be sold in units (each, a "common share unit") and the pre-funded warrants and the accompanying Common Share Purchase Warrants will be sold in units (each, a "pre-funded warrant unit" and, together with the common share units, the "units"), with each common share unit consisting of one common share and one Common Share Purchase Warrant to purchase one common share and each prefunded warrant unit consisting of one pre-funded warrant and one Common Share Purchase Warrant to purchase one common share. For each pre-funded warrant unit we sell, the number of common share units we are offering will be decreased on a one-for-one basis. The common shares, pre-funded warrants, and Common Share Purchase Warrants will be immediately separable on issuance. Each common share unit will be sold at a price of US$6.00 per common share unit (assuming a public offering price of US$6.00 per common share representing the closing price of our common stock on the Canadian Securities Exchange (the "CSE") of US$0.51 per common share on September 3, 2021 based on the Bank of Canada daily rate of exchange U.S.$1.00 = $1.2518 or $1.00 = U.S.$0.7988 on September 3, 2021, and giving effect to a proposed share consolidation ratio of 11.740:1 (the "Proposed Share Consolidation"). The final public offering price of each common share unit and the exercise price of each Common Share Purchase Warrant offered hereunder will be determined through negotiations between us and the lead underwriter in the offering as well as by reference to the trading price of the common shares on the CSE. The purchase price of each pre-funded warrant unit will be equal to the price at which each common share unit is sold to the public in this offering, minus US$0.0001, and the exercise price of each pre-funded warrant will be US$0.0001 per common share.

On September 2, 2021, our shareholders approved our board of directors to effect a share consolidation of our outstanding common shares at a specific ratio within a range from one-for-five to one-for-forty-five, and also granted authorization to our board of directors to determine, in its sole discretion, the specific ratio and timing of such reverse stock split. We intend for our board of directors to effect such share consolidation in connection with this offering and our intended listing of our common shares on the either Nasdaq Capital Market ("Nasdaq") or NYSE American ("NYSE"), however we cannot guarantee that the Proposed Share Consolidation will occur based on the ratio stated above, that the Proposed Share Consolidation will be necessary or will occur in connection with the listing of our common shares on Nasdaq or NYSE, or that Nasdaq or NYSE will approve our initial listing application for our common shares upon the Proposed Share Consolidation.

We plan to file a pre-effective amendment that will include the final consolidation ratio, provided that the final ratio is other than the assumed 11.740:1 ratio. To comply with Nasdaq or NYSE rules, on the fourth trading day following the filing of the pre-effective amendment, the Company will concurrently effect the share consolidation, price the offering, uplist to Nasdaq or NYSE, file a registration statement on Form 8-A, and request that the Commission declare the pre-effective amendment effective prior to closing on that fourth day. Following the effectiveness of this Registration Statement on Form F-1, we would then file the final prospectus prior to closing of the offering. Because the share consolidation will occur concurrently with the potential uplist and closing, potential investors will not be able to check the actual post-consolidation market price before confirming purchases in the offering**.**

Our common shares are currently quoted under the symbol "XRTXF" on the OTCQB and under the symbol "XRX" on the Canadian Securities Exchange ("CSE"). We have applied to list our common shares on Nasdaq or NYSE under the trading symbol "XRTX". The successful listing of our common shares on Nasdaq or NYSE is a condition of this offering. We are an "emerging growth company" as defined by the Jumpstart Our Business Startups Act of 2012 (the "JOBS Act") and, as such, we have elected to comply with certain reduced public company reporting requirements for this prospectus and future filings. However, we have elected not to take advantage of the extended transition period allowed for emerging growth companies for complying with new or revised accounting guidance as allowed by Section 107 of the JOBS Act and Section 7(a)(2)(B) of the Securities Act. The Common Share Purchase Warrants and the pre-funded warrants will not be listed on any national securities exchange or other nationally recognized trading system.

Investing in our securities involves a high degree of risk. See "Risk Factors" beginning on page 10.

	Per Common Share Unit (2)	**Per Pre-Funded Warrant Unit (2)**	**Total**
Public offering price			
Underwriting discounts and commissions (1)			
Proceeds, before expenses, to us (3)			

(1) The underwriters will receive compensation in the form of reimbursement of expenses, in addition to the underwriting discount and commissions. See "Underwriting" for additional information regarding total underwriter compensation.

(2) The public offering price and underwriting discounts and commissions correspond to an assumed public offering price per common share unit of US$6.00, an assumed public offering price per pre-funded warrant unit of US$5.9999.

(3) The amount of the offering proceeds to us presented in this table does not give effect to any exercise of the pre-funded warrants or the warrants being issued in this offering.

We have granted the underwriters the right to purchase up to an additional 375,000 common shares and/or Common Share Purchase Warrants to cover over-allotments, if any assuming an initial public offering price of US$6.00 per unit. The underwriters can exercise this right at any time within 45 days after the date of this prospectus. In addition, we will issue to the underwriters warrants to purchase a number of common shares equal to an aggregate of 5.0% of the common shares and/or pre-funded warrants sold in the offering. The exercise price of the underwriters' warrants is equal to 100% of the offering price of the common shares and/or pre-funded warrants offered hereby. The underwriters' warrants are exercisable beginning six months from the effective date of the offering, from time to time, in whole or in part, within five years commencing from the effective date of the offering.

The underwriters expect to deliver the securities against payment on or about , 2021.

Neither the Securities and Exchange Commission nor any state or Canadian securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

A.G.P.

Prospectus dated _____, 2021

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form F-1 that we filed with the SEC.

You should read this prospectus and the related registration statement carefully. This prospectus and registration statement contain important information you should consider when making your investment decision. See "Where You Can Find More Information" in this prospectus.

Neither we nor the underwriters have authorized anyone to provide you with information other than that contained in this prospectus or in any free writing prospectus prepared by or on behalf of us or to which we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give to you. The information contained in this prospectus or any free writing prospectus is accurate only as of the date of this prospectus or such free writing prospectus, regardless of the time of delivery of this prospectus or any free writing prospectus.

We are offering to sell, and seeking offers to buy, securities only in jurisdictions where offers and sales are permitted. Neither we nor the underwriters have taken any action to permit a public offering of our securities or the possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than the United States. You are required to inform yourselves about and to observe any restrictions relating to this offering and the distribution of this prospectus.

We express all amounts in this prospectus in Canadian dollars, except where otherwise indicated. References to "$" is to Canadian dollars and references to "US$" are to U.S. dollars.

Except as noted information contained in this prospectus gives effect to a proposed 11.740 to 1 share consolidation (the "Proposed Share Consolidation").

Except as otherwise indicated, references in this prospectus to "XORTX," "the Company," "we," "us" and "our" refer to XORTX Therapeutics Inc. and its consolidated subsidiaries.

PROSPECTUS SUMMARY

This summary highlights certain information contained elsewhere in this prospectus. This summary does not contain all of the information that may be important to you. You should read and carefully consider the following summary together with the entire prospectus, especially the "Risk Factors" section of this prospectus and our consolidated financial statements and the notes thereto appearing elsewhere in this prospectus before deciding to invest in our securities. For more information on our business refer to the "Business" section of this prospectus. Some of the statements in this prospectus constitute forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in such forward-looking statements as a result of certain factors, including those discussed in the "Risk Factors" and other sections of this prospectus. See "Cautionary Note Regarding Forward-Looking Statements."

Overview

We are a clinical-stage biotechnology company focused on identifying, developing and commercializing therapies to treat progressive kidney disease modulated by aberrant purine and uric acid metabolism in renal disease indications such as autosomal dominant polycystic kidney disease ("ADPKD"), acute kidney injury ("AKI") due to coronavirus COVID-19 infection, and type 2 diabetic nephropathy ("T2DN").

Our focus is on developing three therapeutic products to slow or reverse the progression of kidney disease in patients at risk of end stage kidney failure, address the immediate need of individuals facing coronavirus induced AKI and the identification of other opportunities where our existing and new intellectual property can be leveraged to address health issues. We believe that our innovative technology is underpinned by well-established research and insights into the underlying biology of oxypurinol, our key pharmaceutical ingredient and a powerful uric acid lowering agent that works by effectively inhibiting xanthine oxidase.

Our product candidates are based upon unique proprietary oxypurinol formulations with additional excipient ingredients, other uric acid lowering agents, and/or modified with other functional groups. The programs for our product candidates will address ADPKD, AKI due to COVID-19 infection, and T2DN. In addition, as the life cycle of our product candidates matures, we contemplate further expanding the oxypurinol pipeline with additional formulations adapted for different disease indications where elevated uric acid is a common denominator, such as polycystic kidney disease, pre-diabetes, insulin resistance, metabolic syndrome, diabetes, diabetic nephropathy, and infections. In addition, the company contemplates development and business partnerships intended to expand our pipeline with therapies to address the above mentioned medical needs associated with the above mentioned diseases. Our proprietary pipeline-in-a-product strategy is supported by our intellectual property, established exclusive manufacturing agreements, and our plan to conduct clinical trials with experienced clinicians.

At XORTX Therapeutics, we aim to redefine the treatment of kidney diseases by developing medications to improve the quality-of-life of patients by modulating aberrant purine and uric acid metabolism thereby lowering and managing chronically or acutely elevated uric acid.

Our Proprietary Pipeline-in-a-Product

XORTX's pipeline-in-a-product strategy is based upon oxypurinol formulated with additional ingredients, other uric acid lowering agents, and/or modified with other functional groups, to generate the XRx-008, XRx-101 and XRx-225 product candidates.

Our pipeline is based upon oxypurinol, which is a metabolite of the purine-based xanthine oxidase inhibitor allopurinol. When administered orally, allopurinol is broken down oxypurinol and other metabolites, including free oxygen radicals. Some individuals are intolerant to using allopurinol, and oxypurinol may be used as an alternative. For example, in a briefing document from 2004, Cardiome Pharma Corp. documented that in third party conducted clinical studies where oxypurinol was administered to patients that were intolerant of allopurinol, it was tolerated without an adverse event considered to be related to oxypurinol by 77% of patients in one study and by 75% of patients in another study.

XRx-008 and XRx-101, XORTX's unique proprietary formulations of oxypurinol, are currently at a clinical stage of development. XORTX is developing proprietary formulations of oxypurinol because it is well-tolerated and XORTX's product candidates use formulations that it believes will improve oral and intravenous administration of this drug. These formulations are designed to have improved properties that increase absorption, bioavailaiblity and increase the range over which the drug can be administered. To our knowledge, product candidates based upon oxypurinol are only being developed by XORTX.

All of our product candidates, XRx-008, XRx-101 and XRx-225, are in preclinical or clinical development, but we have not conducted any clinical trials to date. However, the process of product development is inherently uncertain and any potential advantages of our product candidates are speculative. We believe that XORTX's use of oxypurinol would support a New Drug Application (NDA) under the pathway established in Section 505(b)(2) of the Federal Food, Drug, and Cosmetic Act, and supporting a reformulation of oxypurinol with increased bioavailability and superior tolerability compared to allopurinol. The use of the 505(b)(2) developmental pathway requires an NDA containing full reports of investigations of safety and effectiveness, and at least some of the information required for approval may come from studies not conducted by or for XORTX. The data that would be referenced within the planned NDA was originally developed by a third party for the indication of allopurinol intolerant gout, although oxypurinol has not received final FDA marketing approval. In the future, one option available to XORTX is to use allopurinol as a reference drug under the 505(b)2 development path. For each of our XRx-008 and XRx-101 programs, we have filed a pre-IND submission with the FDA and have received guidance regarding advancement into bridging bioequivalence studies and Phase 3 clinical trials relying on the use of the 505(b)(2) development pathway. XORTX is in the process of setting up good manufacturing practice (GMP) compliant manufacturing of oxypurinol in different formulations to complete the necessary clinical studies in different indications including ADPKD, AKI due to COVID-19 infections and T2DN.

Our expertise and understanding of the pathological effects of aberrant purine metabolism combined with our understanding of uric acid lowering agent structure and function, has enabled the development of our proprietary pipeline-in-a-product strategy. This is a complementary suite of therapeutic product candidates designed to provide unique solutions for acute and chronic diseases. We believe that our product candidates address a unique mechanism of injury and for this reason, in some renal diseases, can be used in a complementary way with existing therapies to develop tailored approaches to help address renal disease indications in multiple body systems through management of chronic or acute hyperuricemia, immune modulation, and metabolic disease.

We believe our in-house drug design and formulation capabilities confer significant competitive advantage to our therapeutic pipeline and are ultimately reflected in our product candidate programs. Some of these key advantages are:

Highly Modular and Customizable.

Our pipeline is based upon the use of unique proprietary formulations of oxypurinol with additional ingredients, other uric acid lowering agents, and/or modified with other functional groups to address acute, intermittent or chronic disease progression such as ADPKD, AKI due to COVID-19 infection, and T2DN. For example, our XRx-101 product candidate program for AKI is designed to rapidly decrease serum uric acid in hospitalized COVID-19 infected patients, then maintain decreased circulating concentrations of uric acid using a unique proprietary formulation of the xanthine oxidase inhibitor.

Our XRx-008 product candidate program is designed for longer term stable chronic oral dosing of xanthine oxidase inhibitors. The capabilities of our formulation technology is intended to allow us to manage the unique challenges of renal disease by modulating purine metabolism, decrease and maintain low circulating uric acid concentrations, as well as decrease inflammatory and oxidative state.

Fit-for-purpose.

Our pipeline can also be utilized to engineer new chemical entities and formulations of those agents that have enhanced properties. For example, our XRx-225 product candidate program, some of the intellectual property for which for which we license from third parties, represents a potential new class of xanthine oxidase inhibitor with a targeted design to enhance anti-inflammatory activity. The capability of tailoring the therapeutic benefit of this potential class of new agents permits us to identify targets and disease that we wish to exploit and then, through formulation design, optimize those small molecules and proprietary formulations to maximize clinically meaningful therapeutic effect.

Readily scalable and transferable.

Our in-house small molecule and formulations design expertise is positioned to create a steady succession of product candidates that are scalable, efficient to manufacture (by us, a partner or contract manufacturing organization), and produce high production and high purity active pharmaceutical drug products. We believe this will provide a significant competitive advantage, new intellectual property, and an opportunity to be the first to provide any class of uric acid lowering agent products that target unmet medical needs in kidney disease or to address the health consequences of diabetes and clinically meaningful improvement to quality of life.

Our team's expertise in uric acid lowering agents, specifically in the development and use of xanthine oxidase inhibitors, has enabled the development of our therapeutic product candidates to treat the symptoms of, and potentially delay the progression of ADPKD, AKI due to COVID-19 infection, and T2DN. We do note that there is no guarantee that the FDA will approve our proposed uric acid lowering agent products for the indications that we may seek, including treatment of kidney disease or the health consequences of diabetes.

Product Candidates

Our lead product candidates are XRx-008, XRx-101, and XRx-225, and we plan that the ultimate FDA approval for each would be based upon utilizing the FDA 505(b)(2) developmental pathway. XORTX has filed a pre-IND submission for XRx-008 and has received FDA guidance on steps necessary to advance this program through clinical trial and to the filing of an NDA. XORTX has filed a pre-IND submission in the XRx-101 product candidate program, and the program is advancing toward preparing for a "bridging" pharmacokinetic study for a Phase 3 clinical trial to slow or reverse acute kidney disease in hospitalized individuals with COVID-19. The XRx-225 product candidate program is at the non-clinical stage. There is no guarantee that results from any of the planned trials will be positive or that the FDA will view the results from a respective trial to be sufficient for a marketing approval.

Our Strategy

Our goal is to apply our interdisciplinary expertise and pipeline-in-a-product strategy to further identify, develop and commercialize novel treatments in renal disease and diabetes indications.

To achieve this objective, we intend to pursue the following strategies:

- Submit an NDA to the FDA following the conclusion of the Phase 3 clinical trial of the XRx-008 product candidate program in order to establish a new standard of care for ADPKD.
- Maximize the potential of the XRx-008 program, if approved, through independent commercialization and through opportunistic collaborations with third parties.
- Leverage our pipeline-in-a-product strategy, developing additional proprietary formulations leveraging our experience selecting renal or diabetic disease indications and complementing our developments through acquisitions or in-licensing opportunities in nephrology and diabetes when opportunities arise.

Risk Factors

- Our ability to implement our business strategy is subject to numerous risks that you should be aware of before making an investment decision. These risks are described more fully in the section entitled "Risk Factors" in this prospectus. These risks include, among others:
- we have incurred significant losses since inception and anticipate that we will continue to incur losses for the foreseeable future;

- we will require substantial additional funding, which may not be available to us on acceptable terms, or at all, and, if not available, may require us to delay, scale back, or cease our product development programs or operations;
- we have not generated any revenue to date and may never be profitable;
- we have a limited number of product candidates, all which are still in preclinical or clinical development, and we may fail to obtain regulatory approval or experience significant delays in doing so;
- we believe we were classified as a passive foreign investment company ("PFIC") during the taxable year ended December 31, 2020; we may be a PFIC for our taxable year ending December 31, 2021, or future taxable years; and the classification as a PFIC may have adverse tax consequences on U.S. stockholders;
- our product candidates may have undesirable side effects that may delay or prevent marketing approval or, if approved, require them to be taken off the market, require them to include safety warnings or otherwise limit their sales;
- we may be unable to obtain regulatory approval for our product candidates under applicable regulatory requirements, and the denial or delay of any such approval would delay commercialization of our product candidates and adversely impact our potential to generate revenue, our business and our results of operations;
- security breaches, loss of data and other disruptions could compromise sensitive information related to our business or protected health information or prevent us from accessing critical information and expose us to liability, which could adversely affect our business and our reputation;
- COVID-19 pandemic may materially and adversely affect our business and financial results;
- our existing strategic partnerships are important to our business, and future strategic partnerships may also be important to us; if we are unable to maintain any of these strategic partnerships, or if these strategic partnerships are not successful, we may not realize the anticipated benefits of our strategic partnerships and our business could be adversely affected;
- we rely on third parties to monitor, support, conduct and oversee clinical trials of the product candidates that we are developing and, in some cases, to maintain regulatory files for those product candidates;
- our commercial success depends significantly on our ability to operate without infringing the patents and other proprietary rights of third parties;
- our patents covering one or more of our product candidates could be found invalid or unenforceable if challenged;
- if we are unable to obtain, maintain and enforce patent and trade secret protection for our product candidates and related technology, our business could be materially harmed; and
- if we are unable to protect the confidentiality of our proprietary information, the value of our technology and product candidates could be adversely affected.

Our Corporate Information

We were incorporated under the laws of Alberta, Canada on August 24, 2012, under the name ReVasCor Inc. and were continued under the Canada Business Corporations Act on February 27, 2013, under the name of XORTX Pharma Corp. Upon completion of a reverse take-over transaction on January 10, 2018, with APAC Resources Inc. ("APAC"), a company incorporated under the laws of British Columbia, we changed our name to "XORTX Therapeutics Inc." and XORTX Pharma Corp. became a wholly-owned subsidiary.

Our registered office is located at Suite 4000, 421 – 7th Avenue SW, Calgary, Alberta, Canada T2P 4K9 and our telephone number is (403) 455-7717. Our website address is www.xortx.com. The information contained on, or that

can be accessed through, our website is not a part of this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.

Implications of Being an Emerging Growth Company

As a company with less than US$1.07 billion in revenue during our last fiscal year, we qualify as an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. An emerging growth company may take advantage of specified reduced reporting and other burdens that are otherwise applicable generally to public companies. These provisions include:

- reduced executive compensation disclosure;
- exemptions from the requirement to hold a non-binding advisory vote on executive compensation, including golden parachute compensation; and
- an exemption from the auditor attestation requirement in the assessment of our internal control over financial reporting pursuant to the Sarbanes-Oxley Act of 2002.

We may take advantage of these provisions until we are no longer an emerging growth company. We would cease to be an emerging growth company upon the earlier to occur of: (1) the last day of our fiscal year following the fifth anniversary of the completion of this offering; (2) the last day of the fiscal year in which we have total annual gross revenue of US$1.07 billion or more; (3) the date on which we have issued more than US$1.0 billion in nonconvertible debt during the previous three years; or (4) the date on which we are deemed to be a large accelerated filer under the rules of the Securities and Exchange Commission, or the SEC. We have elected not to take advantage of the extended transition period allowed for emerging growth companies for complying with new or revised accounting guidance as allowed by Section 107 of the JOBS Act and Section 7(a)(2)(B) of the Securities Act.

We intend to report under the Securities Exchange Act of 1934, as amended, or the Exchange Act, as a non-U.S. company with foreign private issuer status. Even after we no longer qualify as an emerging growth company, as long as we continue to qualify as a foreign private issuer under the Exchange Act, we will be exempt from certain provisions of the Exchange Act that are applicable to U.S. domestic public companies, including:

- the sections of the Exchange Act regulating the solicitation of proxies, consents or authorizations with respect to a security registered under the Exchange Act;
- the sections of the Exchange Act requiring insiders to file public reports of their share ownership and trading activities and liability for insiders who profit from trades made in a short period of time; and
- the rules under the Exchange Act requiring the filing with the SEC of quarterly reports on Form 10-Q containing unaudited financial statements and other specified information, and current reports on Form 8-K upon the occurrence of specified significant events, although we report our results of operations on a quarterly basis under the Canadian securities laws.

Both foreign private issuers and emerging growth companies are also exempt from certain more stringent executive compensation disclosure rules. Thus, even if we no longer qualify as an emerging growth company, but remain a foreign private issuer, we will continue to be exempt from the more stringent compensation disclosures required of companies that are neither an emerging growth company nor a foreign private issuer.

We would cease to be a foreign private issuer at such time as more than 50% of our outstanding voting securities are held by U.S. residents, and any one of the following three circumstances applies: (i) the majority of our executive officers or directors are U.S. citizens or residents, (ii) more than 50% of our assets are located in the United States or (iii) our business is administered principally in the United States.

In this prospectus, we have taken advantage of certain of the reduced reporting requirements as a result of being an emerging growth company and a foreign private issuer. Accordingly, the information contained herein may be different than the information you receive from other public companies in which you hold equity securities.

The Offering	
Common shares offered by us	2,500,000 shares, assuming no sale of pre-funded warrants.
Pre-funded warrants offered by us	We are also offering to certain purchasers whose purchase of common shares in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common shares immediately following the consummation of this offering, the opportunity to purchase, if such purchasers so choose, pre-funded warrants, in lieu of common shares that would otherwise result in any such purchaser's beneficial ownership exceeding 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common shares. Each pre-funded warrant will be exercisable for one common share. The purchase price of each pre-funded warrant will equal the price at which the common shares are being sold to the public in this offering, minus US$0.0001, and the exercise price of each pre-funded warrant will be US$0.0001 per share. The pre-funded warrants will be exercisable immediately and may be exercised at any time until all of the pre-funded warrants are exercised in full. This offering also relates to the common shares issuable upon exercise of any pre-funded warrants sold in this offering. For each pre-funded warrant we sell, the number of common shares we are offering will be decreased on a one-for-one basis. For additional information, see "Description of Share Capital —Pre-Funded Warrants to be Issued as Part of this Offering" on page of 131 this prospectus.
Common Share Purchase Warrants offered by us	Common Share Purchase Warrants to purchase an aggregate of 2,500,000 common shares. Each Common Share Purchase Warrant will have an assumed exercise price of US$6.00 per share, will be immediately exercisable and will expire on the fifth anniversary of the original issuance date. The common shares and pre-funded warrants, and the Common Share Purchase Warrants will be issued separately and will be immediately separable upon issuance. This prospectus also relates to the offering of the common shares issuable upon exercise of the Common Share Purchase Warrants. For additional information, see "Description of Share Capital — Common Share Purchase Warrants to be Issued as Part of this Offering" on page 132 of this prospectus
Over-allotment option	We have granted the underwriters a 45-day option to purchase up to additional common shares and/or Common Share Purchase Warrants at the public offering price, less underwriting discounts and commissions on the same terms as set forth in this prospectus.
Common Share Units	The common shares and accompanying Common Share Purchase Warrants will be sold in units, with each unit consisting of one common share and one warrant to purchase one common share. Each common share unit will be sold at a price of US$6.00 per unit (assuming a public offering price of US$6.00 per common share, representing the closing price of our common stock on the CSE of US$0.51 per common share on September 3, 2021, and based on the September 2, 2021 Bank of Canada daily rate of exchange of U.S.$1.00 = $1.2518 or $1.00 = U.S.$0.7988, and giving effect to a proposed share consolidation ratio of 11.740:1). The common share units will be separable immediately upon issuance.

Pre-Funded Warrant Units	The pre-funded warrants and accompanying Common Share Purchase Warrants will be sold in units, with each unit consisting of one pre-funded warrant and one Common Share Purchase Warrant to purchase one common share. The assumed purchase price of each pre-funded warrant unit will equal the price at which a common share unit is being sold to the public in this offering, minus US$0.0001. The pre-funded warrant units will be separable immediately upon issuance. For each pre-funded warrant unit we sell, the number of common share units we are offering will be decreased on a one-for-one basis.
Common shares to be outstanding after this offering	11,876,210 shares (12,251,210 shares if the over-allotment option is exercised in full) (assuming none of the warrants issued in this offering are exercised and no sale of any pre-funded warrants).
Use of proceeds	We estimate that the net proceeds to us from the sale of securities in this offering will be approximately US$15.0 million, or US$17.25 million if the underwriters exercise their over-allotment option in full, assuming an initial public offering price of US$6.00 per share and related Common Share Purchase Warrants as set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. We intend to use the net proceeds of this offering to fund our ongoing research and development activities, and for working capital and general corporate purposes. See “Use of Proceeds”.
Proposed trading symbol	“XRTX”
No Listing of Warrants	We do not intend to apply for listing of the pre-funded warrants or Common Share Purchase Warrants on any national securities exchange or trading system.
Risk factors	See “Risk Factors” and the other information included in this prospectus for a discussion of factors you should consider carefully before investing in our common shares.

The number of common shares to be outstanding after this offering is based on 9,376,210 common shares outstanding as of August 31, 2021, after giving effect to the Proposed Share Consolidation and excludes:

- 570,698 common shares issuable upon the exercise of outstanding options to issue common shares, as of August 31, 2021, at a weighted-average exercise price of $3.05 per share; and
- 2,144,005 common shares issuable upon the exercise of outstanding common share warrants, as of August 31, 2021, at a weighted-average exercise price of $4.70 per share.

Unless otherwise indicated, all information in this prospectus reflects or assumes: (i) no exercise of the Common Share Purchase Warrants or warrants issued to the underwriters; and (ii) no exercise by the underwriters of their option to purchase up to an additional 375,000 common shares and/or pre-funded warrants in this offering.

Summary Historical Consolidated Financial Data

The following tables summarize our historical consolidated financial data for the periods presented and should be read together with "Management's Discussion and Analysis of Financial Condition and Results of Operations", and our consolidated financial statements and related notes appearing elsewhere in this prospectus. The summary historical consolidated statements of operations data for the years ended December 31, 2020 and 2019 have been derived from our audited consolidated financial statements and related notes included elsewhere in this prospectus. The consolidated statement of operations data for the three and six months ended June 30, 2020 and 2021 and the consolidated balance sheet data as of June 30, 2021 have been derived from our unaudited consolidated financial statements included elsewhere in this prospectus and have been prepared on the same basis as the audited consolidated financial statements. Our consolidated financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS"), and are presented in Canadian dollars except where otherwise indicated. The following information gives effect to the Proposed Share Consolidation. Our historical results are not necessarily indicative of the results we expect in the future.

	Year Ended		Three Months Ended		Six Months Ended	
	December 31, 2020	December 31, 2019	June 30, 2021	June 30, 2020	June 30, 2021	June 30, 2020
	$	$	$	$	$	$
Expenses						
Amortization	20,439	19,900	4,373	5,095	8,617	10,145
Consulting	102,880	46,561	94,480	33,708	246,341	48,708
General and administrative	9,516	17,344	13,012	3,445	23,824	5,841
Investor relations	241,177	34,782	60,251	40,081	265,125	78,356
Listing fees.	52,138	42,495	36,903	14,063	51,456	25,826
Professional fees	162,580	108,427	491,552	22,785	604,373	49,761
Research and development	277,455	39,897	26,423	12,452	40,209	14,874
Share-based payments	293,443	26,317	90,451	189,524	293,441	196,252
Travel	8,460	36,076	-	-	2,100	8,460
Wages and benefits	227,905	194,166	48,000	49,740	100,412	100,097
Loss before other items	(1,395,993)	(565,965)	(865,445)	(370,893)	(1,635,898)	(538,320)
Accretion	(846)	(1,638)	–	(425)	–	(846)
Transaction costs on derivative warrant liability	–	–	–	–	(85,732)	–
Gain (loss) on derivative warrant liability	–	–	655,000	–	(660,000)	–
Foreign exchange gain (loss)	2,961	(26,397)	(7,336)	(90,907)	(7,723)	52,197
Interest and other expenses	(12,666)	(35,576)	(665)	(2,525)	(2,547)	(11,012)
Impairment of intangible assets	(64,562)	–	–	–	–	–
Recovery of provision for patent acquisition	95,490	–	–	–	–	–
Forgiveness of debt	91,014	–	–	91,014	–	91,014
Net loss and comprehensive loss for the year	(1,284,602)	(629,576)	(218,446)	(373,736)	(2,391,900)	(406,967)
Basic and diluted loss per common share	(0.02)	(0.01)	(0.00)	(0.01)	(0.02)	(0.01)
Weighted average number of common shares outstanding						
Basic and diluted	78,235,658	62,919,691	110,076,717	81,179,118	103,407,267	75,259,853

RISK FACTORS

Investing in our securities is speculative and involves a high degree of risk. You should consider carefully the following risk factors, as well as the other information in this prospectus, including our consolidated financial statements and notes thereto, before you decide to purchase our securities. If any of the following risks actually occur, our business, financial conditions, results of operations and prospects could be materially adversely affected, the value of our securities could decline and you may lose all or part of your investment. This prospectus also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of a number of factors, including the risks described below. See "Cautionary Note Regarding Forward-Looking Statements."

Risks Related to Our Financial Position and Need for Additional Capital

We have incurred significant losses since inception and anticipate that we will continue to incur losses for the foreseeable future. We have no products approved for commercial sale, and to date we have not generated any revenue or profit from product sales. We may never achieve or sustain profitability.

We are a clinical-stage biotechnology company. We have incurred significant losses since our inception. Our net losses for the years ended December 31, 2018, 2019 and 2020 were $3.77 million, $629 thousand and $1.28 million, respectively. As of December 31, 2020, our accumulated deficit was approximately $8.04 million. We expect to continue to incur losses for the foreseeable future, and we expect these losses to increase as we continue our research and development of, and seek regulatory approvals for, our product candidates, prepare for and begin to commercialize any approved product candidates and add infrastructure and personnel to support our product development efforts and operations as a public company. The net losses and negative cash flows incurred to date, together with expected future losses, have had, and likely will continue to have, an adverse effect on our shareholders' deficit and working capital. The amount of future net losses will depend, in part, on the rate of future growth of our expenses and our ability to generate revenue.

Because of the numerous risks and uncertainties associated with pharmaceutical product development, we are unable to accurately predict the timing or amount of increased expenses or when, or if, we will be able to achieve profitability. For example, our expenses could increase if we are required by the FDA to perform trials in addition to those that we currently expect to perform, or if there are any delays in completing our currently planned clinical trials or in the development of any of our product candidates.

To become and remain profitable, we must succeed in developing and commercializing product candidates with significant market potential. This will require us to be successful in a range of challenging activities for which we are only in the preliminary stages, including developing product candidates, obtaining regulatory approval for such product candidates, and manufacturing, marketing and selling those product candidates for which we may obtain regulatory approval. We may never succeed in these activities and may never generate revenue from product sales that is significant enough to achieve profitability. Even if we achieve profitability in the future, we may not be able to sustain profitability in subsequent periods. Our failure to become or remain profitable would depress our market value and could impair our ability to raise capital, expand our business, develop other product candidates, or continue our operations. A decline in the value of our company could also cause you to lose all or part of your investment.

We will require substantial additional funding, which may not be available to us on acceptable terms, or at all, and, if not available, may require us to delay, scale back, or cease our product development programs or operations.

We are currently advancing two of our product candidates through preclinical and clinical development as well as other potential product candidates through discovery. Developing pharmaceutical products, including conducting preclinical studies and clinical trials, is expensive. In order to obtain such regulatory approval, we will be required to conduct clinical trials for each indication for each of our product candidates. We will continue to require additional funding beyond this contemplated offering to complete the development and commercialization of our product candidates and to continue to advance the development of our other product candidates and such funding may not be available on acceptable terms or at all.

Although it is difficult to predict our liquidity requirements, based upon our current operating plan, we believe that the net proceeds from this offering, together with our existing cash and cash equivalents will enable us to advance

the clinical development of XRx-008, XRx-101 and XRx-225 product candidates. However, because successful development of our product candidates and the achievement of milestones by our strategic partners is uncertain, we are unable to estimate the actual funds we will require to complete research and development and to commercialize our product candidates.

Our future funding requirements will depend on many factors, including but not limited to:

- the number and characteristics of other product candidates that we pursue;
- the scope, progress, timing, cost and results of research, preclinical development, and clinical trials;
- the costs, timing and outcome of seeking and obtaining FDA and non-U.S. regulatory approvals;
- the costs associated with manufacturing our product candidates and establishing sales, marketing and distribution capabilities;
- our ability to maintain, expand and defend the scope of our intellectual property portfolio, including the amount and timing of any payments we may be required to make in connection with the licensing, filing, defense and enforcement of any patents or other intellectual property rights;
- our need and ability to hire additional management, scientific and medical personnel;
- the effect of competing products that may limit market penetration of our product candidates;
- our need to implement additional internal systems and infrastructure, including financial and reporting systems; and
- the economic and other terms, timing of and success of our existing strategic partnerships, and any collaboration, licensing, or other arrangements into which we may enter in the future, including the timing of receipt of any milestone or royalty payments under these agreements.

Until we can generate a sufficient amount of product revenue to finance our cash requirements, which we may never do, we expect to finance future cash needs primarily through a combination of public and private equity offerings. If sufficient funds on acceptable terms are not available when needed, or at all, we could be forced to significantly reduce operating expenses and delay, scale back or eliminate one or more of our development programs or our business operations.

Raising additional capital may cause dilution to our shareholders, including purchasers of securities in this offering, restrict our operations or require us to relinquish substantial rights.

To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these new securities may include liquidation or other preferences that adversely affect your rights as a common shareholder. Debt financing, if available at all, 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. If we raise additional funds through partnerships, collaborations, strategic alliances, or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, product candidates, or future revenue streams, or grant licenses on terms that are not favorable to us. We cannot assure you that we will be able to obtain additional funding if and when necessary. If we are unable to obtain adequate financing on a timely basis, we could be required to delay, scale back or eliminate one or more of our development programs or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves

Unstable market and economic conditions may have serious adverse consequences on our business and financial condition.

Global credit and financial markets experienced extreme disruptions at various points over the last decade, characterized by diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, increases in unemployment rates and uncertainty about economic stability. If another such disruption in credit and financial markets and deterioration of confidence in economic conditions occurs, our business may be adversely

affected. If the equity and credit markets were to deteriorate significantly in the future, it may make any necessary debt or equity financing more difficult to complete, more costly, and more dilutive. Failure to secure any necessary financing in a timely manner and on favorable terms could have a material adverse effect on our growth strategy, financial performance and share price and could require us to delay or abandon development or commercialization plans. In addition, there is a risk that one or more of our current strategic partners, service providers, manufacturers and other partners would not survive or be able to meet their commitments to us under such circumstances, which could directly affect our ability to attain our operating goals on schedule and on budget.

We have not generated any revenue to date and may never be profitable.

We have devoted substantially all of our financial resources and efforts to developing our proprietary pipeline-in-a-product, strategy identifying potential product candidates and conducting preclinical studies and preparing for clinical trials. We and our partners are still in the early stages of developing our product candidates, and we have not completed development of any products. Our ability to become profitable depends upon our ability to generate revenue. To date, we have not generated any revenue. We do not expect to generate significant product revenue unless or until we successfully complete clinical development and obtain regulatory approval of, and then successfully commercialize, at least one of our product candidates. While the XRx-008 and XRx-101 product candidate programs are advancing towards Phase 3 clinical trials, these programs will require additional preclinical studies or clinical development as well as regulatory review and approval, substantial investment, access to sufficient commercial manufacturing capacity and significant marketing efforts before we can generate any revenue from product sales. We face significant development risk as our product candidates advance further through clinical development. Our ability to generate revenue depends on a number of factors, including, but not limited to:

- timely completion of our preclinical studies and our current and future clinical trials, which may be significantly slower or more costly than we currently anticipate and will depend substantially upon the performance of third-party contractors;
- our ability to complete IND-enabling studies and successfully submit INDs or comparable applications to allow us to initiate clinical trials for our current or any future product candidates;
- whether we are required by the FDA or similar foreign regulatory authorities to conduct additional clinical trials or other studies beyond those planned to support the approval and commercialization of our product candidates or any future product candidates;
- our ability to demonstrate to the satisfaction of the FDA or similar foreign regulatory authorities the safety, efficacy, and acceptable risk-to-benefit profile of our product candidates or any future product candidates;
- the prevalence, duration and severity of potential side effects or other safety issues experienced with our product candidates or future product candidates, if any;
- the timely receipt of necessary marketing approvals from the FDA or similar foreign regulatory authorities;
- the willingness of physicians and patients to utilize or adopt any of our product candidates or future product candidates;
- our ability and the ability of third parties with whom we contract to manufacture adequate clinical and commercial supplies of our product candidates or any future product candidates, remain in good standing with regulatory authorities and develop, validate and maintain commercially viable manufacturing processes that are compliant with cGMP requirements;
- our ability to successfully develop a commercial strategy and thereafter commercialize our product candidates or any future product candidates in the United States and internationally, if licensed for marketing, reimbursement, sale and distribution in such countries and territories, whether alone or in collaboration with others; and
- our ability to establish and enforce intellectual property rights in and to our product candidates or any future product candidates.

Many of the factors listed above are beyond our control, and could cause us to experience significant delays or prevent us from obtaining regulatory approvals or commercialize our product candidates. Even if we are able to commercialize our product candidates, we may not achieve profitability soon after generating product sales, if ever. If we are unable to generate sufficient revenue through the sale of our product candidates or any future product candidates, we may be unable to continue operations without continued funding.

Our limited operating history may make it difficult for you to evaluate the success of our business to date and to assess our future viability.

We are a clinical-stage biotechnology company with a limited operating history. Our operations to date have been limited to organizing and staffing our company, business planning, raising capital, conducting discovery and research activities, filing patent applications, identifying potential product candidates, initiating and conducting clinical trials, undertaking preclinical studies, in-licensing product candidates for development, and establishing arrangements with third parties for the manufacture of initial quantities of our product candidates and component materials. Our primary development program is at a late clinical stage. We have not yet demonstrated our ability to successfully complete any clinical trials, obtain marketing approvals, manufacture a commercial-scale product or arrange for a third party to do so on our behalf, or conduct sales, marketing and distribution activities necessary for successful product commercialization. Consequently, any predictions you make about our future success or viability may not be as accurate as they could be if we had a longer operating history.

In addition, as a young business, we may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown factors. We will need to transition at some point from a company with a research and development focus to a company capable of supporting commercial activities. We may not be successful in such a transition.

Risks Related to Our Business and the Development of Our Product Candidates

We have a limited number of product candidates, all which are still in preclinical or early clinical development. If we do not obtain regulatory approval of one or more of our product candidates, or experience significant delays in doing so, our business will be materially adversely affected.

We currently have no product candidates approved for sale or marketing in any country, and may never be able to obtain regulatory approval for any of our product candidates. As a result, we are not currently permitted to market any of our product candidates in the United States or in any other country until we obtain regulatory approval from the U.S. Food and Drug Administration ("FDA") or comparable regulatory authorities outside the United States. Our product candidates are in various stages of development and we have not submitted an application, or received marketing approval, for any of our product candidates. Furthermore, the fact that our core competencies have been recognized through strategic partnerships does not improve our product candidates' outlook for regulatory approval. We have limited experience in conducting and managing the clinical trials necessary to obtain regulatory approvals, including approval by the FDA. Obtaining regulatory approval of our product candidates will depend on many factors, including, but not limited to, the following:

- successfully completing formulation and process development activities;
- completing clinical trials that demonstrate the efficacy and safety of our product candidates;
- seeking and obtaining marketing approval from applicable regulatory authorities; and
- establishing and maintaining commercial manufacturing capabilities through relationships with third parties.

Many of these factors are wholly or partially beyond our control, including clinical advancement, the regulatory submission process and changes in the competitive landscape. If we do not achieve one or more of these factors in a timely manner, we could experience significant delays or an inability to develop our product candidates at all.

Clinical trials are very expensive, time consuming and difficult to design and implement and involve uncertain outcomes. Furthermore, the results of previous preclinical studies and early-stage clinical trials may not be predictive of future results. Initial results or observations in our ongoing clinical trials may not be indicative of results obtained when these trials are completed or in later stage trials.

Positive or timely results from preclinical or early-stage trials do not ensure positive or timely results in late-stage clinical trials or product approval by the FDA or comparable foreign regulatory authorities. We will be required to demonstrate with substantial evidence through well-controlled clinical trials that our product candidates are safe and effective for their intended use(s) in a diverse population before we can seek regulatory approvals for their commercial sale. Our planned clinical trials may produce negative or inconclusive results, and we or any of our current and future strategic partners may decide, or regulators may require us, to conduct additional clinical or preclinical testing.

Success in preclinical studies or early-stage clinical trials does not mean that future clinical trials or registration clinical trials will be successful, or otherwise provide adequate data to demonstrate the safety and efficacy of a therapeutic candidate. Product candidates in later-stage clinical trials may fail to demonstrate sufficient safety and efficacy to the satisfaction of the FDA and non-U.S. regulatory authorities, despite having progressed through preclinical studies and initial clinical trials. Product candidates that have shown promising results in early clinical trials may still suffer significant setbacks in subsequent clinical trials or registration clinical trials. For example, a number of companies in the pharmaceutical industry, including those with greater resources and experience than us, have suffered significant setbacks in advanced clinical trials, even after obtaining promising results in earlier clinical trials. Similarly, interim results of a clinical trial do not necessarily predict final results. There can be no assurance that any of our clinical trials will ultimately be successful or support further clinical development, including development in registration-enabling trials, of any of our therapeutic candidates, and any setbacks in our clinical development could have a material adverse effect on our business and operating results.

If clinical trials for our product candidates are prolonged, delayed or stopped, we may be unable to obtain regulatory approval and commercialize our product candidates on a timely basis, or at all, which would require us to incur additional costs and delay our receipt of any product revenue.

We plan to initiate a Phase 3 clinical trial for XRx-008 product candidate program in the treatment of ADPKD, and a Phase 3 clinical trial for XRx-101 product candidate program in the treatment of AKI in COVID-19 infections. We may experience delays in our ongoing or future clinical trials, and we do not know whether future clinical trials will begin on time, need to be redesigned, enroll an adequate number of patients on time or be completed on schedule, if at all. The commencement or completion of these planned clinical trials could be substantially delayed or prevented by many factors, including:

- inability to generate satisfactory preclinical, toxicology or other in vivo or in vitro data capable of supporting the initiation or continuation of clinical trials;
- further discussions with the FDA or other regulatory agencies regarding the scope or design of our clinical trials;
- the limited number of, and competition for, suitable sites to conduct our clinical trials, many of which may already be engaged in other clinical trial programs, including some that may be for the same indication as our product candidates;
- any delay or failure to obtain approval or agreement from regulatory authorities to commence a clinical trial in any of the countries where enrollment is planned;
- inability to obtain sufficient funds required to finance a clinical trial;
- clinical holds on, or other regulatory objections to, a new or ongoing clinical trial;
- delay or failure to manufacture sufficient supplies of the product candidate for our clinical trials;
- delays in reaching agreement on acceptable terms with third-party manufacturers and the time for manufacture of sufficient quantities of our product candidates for use in clinical trials;

- delay or failure to reach agreement on acceptable clinical trial agreement terms or clinical trial protocols with prospective sites or clinical research organizations ("CROs"), the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and clinical trial sites;
- delay or failure to obtain institutional review board, ("IRB"), approval to conduct a clinical trial at each prospective clinical trial site;
- slower than expected trial subject rates of patient recruitment and enrollment, or other failures to recruit and enroll subjects;
- failure of subjects to complete the clinical trial;
- the inability to enroll a sufficient number of subjects in studies to ensure adequate statistical power to detect statistically significant treatment effects;
- unforeseen safety issues, including severe or unexpected drug-related adverse effects experienced by clinical trial subjects, including possible deaths;
- lack of efficacy during clinical trials;
- termination of our clinical trials by one or more clinical trial sites;
- inability or unwillingness of subjects or clinical investigators to follow our clinical trial protocols;
- inability to monitor subjects adequately during or after treatment by us or our CROs;
- our CROs, clinical study sites or investigators failing to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all, deviating from the protocol or dropping out of a study;
- the need to repeat or terminate clinical trials as a result of inconclusive or negative results or unforeseen complications in testing; and
- our clinical trials may be suspended or terminated upon a breach or pursuant to the terms of any agreement with, or for any other reason by, current or future strategic partners that have responsibility for the clinical development of any of our product candidates.

Changes in regulatory requirements, policies and guidelines may also occur and we may need to significantly amend clinical trial protocols to reflect these changes with appropriate regulatory authorities. These changes may require us to renegotiate terms with CROs or resubmit clinical trial protocols to IRBs for re-examination, which may impact the costs, timing or successful completion of a clinical trial. Our clinical trials may be suspended or terminated at any time by the FDA, other regulatory authorities, the IRB overseeing the clinical trial at issue, any of our clinical trial sites with respect to that site, or us.

Any failure or significant delay in commencing or completing clinical trials for our product candidates would adversely affect our ability to obtain regulatory approval and our commercial prospects and ability to generate product revenue will be diminished.

If we experience delays or difficulties in the enrollment of subjects in clinical trials, we will be unable to complete these trials on a timely basis.

We may not be able to initiate or continue clinical trials for our product candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or similar regulatory authorities outside the United States. Trial subject enrollment, a significant factor in the timing of clinical trials, is affected by many factors including:

- the severity of the disease under investigation;
- the size and nature of the patient population;
- the proximity and availability of clinical trial sites for prospective subjects;
- the eligibility criteria for the trial;

- the design of the clinical trial;
- our payments for conducting clinical trials;
- the patient referral practices of physicians;
- the ability to obtain and maintain research subject consents;
- competing clinical trials and clinicians' and patients' perceptions as to the potential advantages of the product candidate being studied in relation to other available therapies; and
- including any new drugs that may be approved for the indications we are investigating.

In particular, we are developing certain of our products for the treatment of rare diseases, which have limited pools of patients from which to draw for clinical testing. If we are unable to enroll a sufficient number of patients to complete clinical testing, we will be unable to gain marketing approval for such product candidates and our business will be harmed. Further, should any competitors have ongoing clinical trials for therapeutic candidates treating the same indications as our therapeutic candidates, patients who would otherwise be eligible for our clinical trials may instead enroll in clinical trials of our competitors' therapeutic candidates. Our inability to enroll a sufficient number of patients for any of our clinical trials could result in significant delays and could require us to abandon one or more clinical trials altogether. Enrollment delays in our clinical trials may result in increased development costs for our product candidates and in delays to commercially launching our product candidates, if approved, which would materially harm our business.

The design or our execution of clinical trials may not support regulatory approval.

The design or execution of a clinical trial can determine whether its results will support regulatory approval and flaws in the design or execution of a clinical trial may not become apparent until the clinical trial is well advanced. In some instances, there can be significant variability in safety or efficacy results between different trials of the same product candidate due to numerous factors, including changes in trial protocols, differences in size and type of the patient populations, adherence to the dosing regimen and other trial protocols and the rate of dropout among clinical trial participants. We do not know whether any Phase 2, Phase 3 or other clinical trials we or any of our strategic partners may conduct will demonstrate consistent or adequate efficacy and safety to obtain regulatory approval to market our product candidates.

Further, the FDA and comparable foreign regulatory authorities have substantial discretion in the approval process and in determining when or whether regulatory approval will be obtained for any of our product candidates. Our product candidates may not be approved even if they achieve their primary endpoints in future Phase 3 clinical trials or registration trials. The FDA or other non-U.S. regulatory authorities may disagree with our trial design and our interpretation of data from preclinical studies and clinical trials. In addition, any of these regulatory authorities may change requirements for the approval of a product candidate even after reviewing and providing comments or advice on a protocol for a pivotal Phase 3 clinical trial that has the potential to result in FDA or other agencies' approval. In addition, any of these regulatory authorities may also approve a product candidate for fewer or more limited indications than we request or may grant approval contingent on the performance of costly post-marketing clinical trials. The FDA or other non-U.S. regulatory authorities may not approve the labeling claims that we believe would be necessary or desirable for the successful commercialization of our product candidates.

Our product candidates may have undesirable side effects that may delay or prevent marketing approval or, if approval is obtained, require them to be taken off the market, require them to include safety warnings or otherwise limit their sales.

Our products are in varied stages of development ranging from preclinical to late stage clinical trial development. All of our product candidates are required to undergo ongoing safety testing in humans through well-designed and IRB-approved clinical trials. However, not all adverse effects of product candidates can be predicted or anticipated. Unforeseen side effects from any of our product candidates could arise either during clinical development or, if approved by regulatory authorities, after the approved product has been marketed and is used by a greater number of patients.

The results of future clinical trials may show that our product candidates cause undesirable or unacceptable side effects, which could interrupt, delay or halt clinical trials, and result in delay of, or failure to obtain, marketing approval from the FDA and other regulatory

authorities, or result in marketing approval from the FDA or other regulatory authorities with restrictive label warnings, limited patient populations or potential product liability claims. Even if we believe that our Phase 1 clinical trial and preclinical studies demonstrate the safety and efficacy of our product candidates, only the FDA or other comparable regulatory agencies may ultimately make such determination. No regulatory agency has made a determination that any of our product candidates are safe or effective for use for any indication.

If any of our product candidates receive marketing approval and we or others later identify undesirable or unacceptable side effects caused by such products:

- regulatory authorities may require us to take our approved product off the market;
- regulatory authorities may require the addition of labeling statements, specific warnings, contraindications to the approved product's label or the dissemination of safety alerts to physicians, pharmacies, and patients;
- we may be required to change the way the product is administered, conduct additional clinical trials or develop a REMS for the product;
- we may be subject to limitations on how we may promote the product;
- sales of the product may decrease significantly;
- we may be subject to litigation or product liability claims; and
- our reputation may suffer.

Any of these events could prevent us or our current or future strategic partners from achieving or maintaining market acceptance of the affected product or could substantially increase commercialization costs and expenses, which in turn could delay or prevent us from generating revenue from the sale of any future products.

Changes in methods of product candidate manufacturing or formulation may result in additional costs or delay.

As product candidates are developed through preclinical to late-stage clinical trials towards approval and commercialization, it is common that various aspects of the development program, such as manufacturing methods and formulation, are altered along the way in an effort to optimize processes and results. Such changes carry the risk that they will not achieve these intended objectives. FDA and other regulatory agencies may in some cases need to be informed of such changes, and they may require additional information or otherwise cause further delay in development programs. Any of these changes could cause our product candidates to perform differently and affect the results of planned clinical trials or other future clinical trials conducted with the altered materials, or they may alter the safety or risk profile of the product candidate that could involve further FDA or other regulatory agency inquiries. This could delay completion of clinical trials, require the conduct of bridging clinical trials or the repetition of one or more clinical trials, increase clinical trial costs, delay approval of our product candidates and jeopardize our ability, or our strategic partners' ability, to commence product sales and generate revenue in the future.

For our clinical trials that we may conduct at sites outside the United States, particularly in countries that are experiencing heightened impact from the COVID-19 pandemic, in addition to the risks listed above, we may experience the following adverse impacts:

- delays in receiving approval from local or centralized regulatory authorities to initiate our planned clinical trials;
- delays in clinical sites receiving the supplies and materials needed to conduct our clinical trials;
- interruption in global shipping that may affect the transport of clinical trial materials, such as investigational drug product and comparator drugs used in our clinical trials;
- changes in local regulations as part of a response to the COVID-19 pandemic, which may require us to change the ways in which our clinical trials are conducted, which may result in unexpected costs, or to discontinue the clinical trials altogether;

- delays in necessary interactions with local regulators, ethics committees and other important agencies and contractors due to limitations in employee resources or forced furlough of government employees; and

- the refusal of the FDA and Health Canada and other regulatory agencies to accept data from clinical trials in these affected geographies.

The global outbreak of the Sars-CoV-2 coronavirus that causes COVID-19 infections continues to rapidly evolve. The extent to which the COVID-19 pandemic may impact our business and clinical trials will depend on future developments, which are highly uncertain and cannot be predicted with confidence, such as the ultimate geographic spread of the disease, the duration of the outbreak, travel restrictions and social distancing in Canada and other countries, business closures or business disruptions and the effectiveness of actions taken in Canada and other countries to contain and treat the disease.

If we are unable to take full advantage of regulatory programs designed to expedite drug development or provide other incentives, our development programs may be adversely impacted.

There are a number of incentive programs administered by the FDA and other regulatory bodies to facilitate development of drugs in areas of unmet medical need, such as fast track designation and breakthrough therapy designation. Our product candidates may not qualify for or maintain designations under these or any of the other of FDA's existing or future programs to expedite drug development in areas of unmet medical need. Our inability to fully take advantage of these incentive programs may require us to run larger trials, incur delays, lose opportunities that may not otherwise be available to us, lose marketing exclusivity for which we would otherwise be eligible and incur greater expense in the development of our product candidates.

Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not mean that we will be successful in obtaining regulatory approval of our product candidates in other jurisdictions.

Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not guarantee that we will be able to obtain or maintain regulatory approval in any other jurisdiction, while a failure or delay in obtaining regulatory approval in one jurisdiction may have a negative effect on the regulatory approval process in others. For example, even if the FDA grants marketing approval of a product candidate, similar foreign regulatory authorities must also approve the manufacturing, marketing and promotion of the product candidate in those countries. Approval and licensure procedures vary among jurisdictions and can involve requirements and administrative review periods different from, and greater than, those in the United States, including additional preclinical studies or clinical trials as clinical trials conducted in one jurisdiction may not be accepted by regulatory authorities in other jurisdictions. In many jurisdictions outside the United States, a product candidate must be approved for reimbursement before it can be approved for sale in that jurisdiction. In some cases, the price that we intend to charge for our products is also subject to approval.

We may also submit marketing applications in other countries. Regulatory authorities in jurisdictions outside of the United States have requirements for approval of product candidates with which we must comply prior to marketing in those jurisdictions. Obtaining similar foreign regulatory approvals and compliance with similar foreign regulatory requirements could result in significant delays, difficulties and costs for us and could delay or prevent the introduction of our products in certain countries. If we fail to comply with the regulatory requirements in international markets and/or receive applicable marketing approvals, our target market will be reduced and our ability to realize the full market potential of our product candidates will be harmed.

Disruptions at the FDA and other government agencies caused by funding shortages or global health concerns could hinder their ability to hire, retain or deploy key leadership and other personnel, or otherwise prevent new or modified products and services from being developed, approved or commercialized in a timely manner, which could negatively impact our business.

The ability of the FDA to review and approve new products can be affected by a variety of factors, including government budget and funding levels, ability to hire and retain key personnel and accept the payment of user fees, statutory, regulatory, and policy changes and other events that may otherwise affect FDA's ability to perform routine functions. Average review times at the agency have fluctuated in recent years as a result. In addition, government funding of other government agencies that fund research and development activities is subject to the political process, which is inherently fluid and unpredictable.

Disruptions at the FDA and other agencies may also slow the time necessary for new drugs to be reviewed and/or approved or cleared by necessary government agencies, which would adversely affect our business. For example, over the last several years, the U.S. government has shut down several times and certain regulatory agencies, such as the FDA, have had to furlough critical FDA employees and stop critical activities.

Separately, in response to the global pandemic of COVID-19 and public health emergency declaration in the U.S., on March 10, 2020 the FDA announced its intention to temporarily postpone most inspections of foreign manufacturing facilities and products, and it subsequently postponed routine surveillance inspections of domestic manufacturing facilities and provided guidance regarding the conduct of clinical trials. As of May 2021, the FDA noted it was continuing to ensure timely reviews of applications for prescription drug products during the COVID-19 pandemic in line with its user fee performance goals and conducting mission-critical domestic and foreign inspections to ensure compliance of manufacturing facilities with FDA quality standards. Utilizing a rating system to assist in determining when and where it is safest to conduct such inspections based on data about the virus's trajectory in a given state and locality and the rules and guidelines that are put in place by state and local governments, FDA is either continuing to, on a case-by-case basis, conduct only mission-critical inspections, or, where possible to do so safely, resuming prioritized domestic inspections, which generally include pre-approval inspections. Foreign pre-approval inspections that are not deemed mission-critical remain postponed, while those deemed mission-critical will be considered for inspection on a case-by-case basis. FDA will use similar data to inform resumption of prioritized operations abroad as it becomes feasible and advisable to do so. The FDA may not be able to maintain this pace and delays or setbacks are possible in the future.

Should FDA determine that an inspection is necessary for NDA approval and an inspection cannot be completed during the review cycle due to restrictions on travel, FDA has stated that it generally intends to issue a complete response letter. Further, if there is inadequate information to make a determination on the acceptability of a facility, FDA may defer action on the application until an inspection can be completed. Additionally, regulatory authorities outside the United States may adopt similar restrictions or other policy measures in response to the COVID-19 pandemic. If a prolonged government shutdown occurs, or if global health concerns continue to prevent the FDA or other regulatory authorities from conducting their regular inspections, reviews, or other regulatory activities, it could significantly impact the ability of the FDA or other regulatory authorities to timely review and process regulatory submissions, which could have a material adverse effect on our business. Further, future government shutdowns could impact our ability to access the public markets and obtain necessary capital in order to properly capitalize and continue our operations.

Our development and regulatory approval strategy in the U.S. depends, in part, on published scientific literature and the FDA's prior findings regarding the safety and efficacy of approved products. If the FDA concludes that our product candidates do not meet the requirements of Section 505(b)(2), approval of such product candidates may be delayed, limited or denied, any of which would adversely affect our ability to generate operating revenues.

The Hatch-Waxman Amendments added section 505(b)(2) to the Federal Food, Drug, and Cosmetic Act, (the "FDCA"), as well as several other provisions. Section 505(b)(2) of the FDCA permits the filing of an NDA where at least some of the information required for approval comes from investigations that were not conducted by or for the applicant and for which the applicant has not obtained a right of reference or use from the person by or for whom the investigations were conducted. The FDA interprets section 505(b)(2) of the FDCA, for the purposes of approving an NDA, to permit the applicant to rely, in part, upon published literature or the FDA's previous findings of safety and efficacy for an approved product. The FDA may also require the applicant to perform additional clinical trials or measurements to support any deviation from the previously approved product. The FDA may then approve the new product candidate for all or some of the label indications for which the referenced product has been approved, as well as for any new indication sought by the section 505(b)(2) applicant. The FDA may require an applicant's product label to have all or some of the limitations, contraindications, warnings or precautions included in the reference product's label, including a black box warning, or may require the label to have additional limitations, contraindications, warnings or precautions. We plan to use the 505(b)(2) NDA pathway for our future marketing application, if the ongoing clinical trials of our product candidates are successful and the totality of the data collected are sufficient to support NDA approval.

If the FDA determines that our product candidates do not meet the requirements of Section 505(b)(2) we may need to conduct additional clinical trials, provide additional data and information and meet additional standards for regulatory approval applicable to a traditional NDA submitted pursuant to Section 505(b)(1). If our product

candidates do not meet the requirements of Section 505(b)(2) of the FDCA or are otherwise ineligible for approval via the Section 505(b)(2) regulatory pathway, the time and financial resources required to obtain FDA approval for these product candidates, and the complications and risks associated with these product candidates, would likely substantially increase. Moreover, a 505(b)(2) application will not be approved until any non-patent exclusivity listed in the FDA publication Approved Drug Products with Therapeutic Equivalence Evaluations, commonly known as the Orange Book, for the listed drug, or for any other drug with the same protected conditions of approval as our product, has expired. An inability to pursue the Section 505(b)(2) regulatory pathway would likely result in new competitive products reaching the market more quickly than our product candidates, which would likely materially adversely impact our competitive position and prospects. Even if we are allowed to pursue the Section 505(b)(2) regulatory pathway, we cannot assure you that our product candidates will receive the requisite approvals for commercialization.

Notwithstanding the approval of many products by the FDA pursuant to Section 505(b)(2), over the last few years, some pharmaceutical companies and other actors have objected to the FDA's interpretation of Section 505(b)(2) of the FDCA to allow reliance on the FDA's prior findings of safety and effectiveness. If the FDA changes its interpretation of Section 505(b)(2), or if the FDA's interpretation is successfully challenged in court, this could delay or even prevent the FDA from approving any Section 505(b)(2) application that we submit in the future. Moreover, the FDA has adopted an interpretation of the three-year exclusivity provisions whereby a 505(b)(2) application can be blocked by exclusivity even if it does not rely on the previously-approved drug that has exclusivity (or any safety or effectiveness information regarding that drug). Under the FDA's interpretation, the approval of one or more of our product candidates may be blocked by exclusivity awarded to a previously-approved drug product that shares certain innovative features with our product candidates, even if our 505(b)(2) application does not identify the previously-approved drug product as a listed drug or rely upon any of its safety or efficacy data. Any failure to obtain regulatory approval of our product candidates would significantly limit our ability to generate revenues, and any failure to obtain such approval for all of the indications and labeling claims we deem desirable could reduce our potential revenues.

Moreover, even if these product candidates are approved under the Section 505(b)(2) regulatory pathway the approval may be subject to limitations on the indicated uses for which the products may be marketed or to other conditions of approval, or may contain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the products.

Risks Related to Our Business and the Commercialization of Our Product Candidates

Even if we complete the necessary clinical trials for our product candidates, the marketing approval process is expensive, time consuming and uncertain and may prevent us from obtaining approvals for the commercialization of our product candidates. If we are not able to obtain, or if there are delays in obtaining, required marketing approvals, we will not be able to commercialize our product candidates, and our ability to generate revenue will be materially impaired.

To date, we have not received approval from the FDA or regulatory authorities in other jurisdictions to market any of our product candidates for any indications. Securing marketing approval requires the submission of extensive preclinical and clinical data and supporting information to regulatory authorities for each therapeutic indication in the relevant patient population to establish the product candidate's safety and effectiveness for that indication. Securing marketing approval also requires the submission of information about the product manufacturing process to, and inspection of manufacturing facilities by, the regulatory authorities. Regulatory authorities may determine that our unapproved product candidates or any potential future product candidate is not effective, is only moderately effective or has undesirable or unintended side effects, toxicities, safety profiles or other characteristics that preclude us from obtaining marketing approval for the product or that limit or restrict its commercial use.

The process of obtaining marketing approvals is expensive, may take many years, if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity and novelty of the product candidates involved. Changes in marketing approval policies during the development period, changes in or the enactment of additional statutes or regulations, or changes in regulatory review for each submitted product application, may cause delays in the approval or rejection of an application. Any marketing approval we ultimately obtain may be limited or subject to restrictions or post-approval commitments that render the approved product not commercially viable. If we experience delays in obtaining approval or if we fail to obtain approval of our product candidates, the commercial prospects for our product candidates may be harmed and our ability to generate revenues will be materially impaired.

We may be unable to obtain regulatory approval for our product candidates under applicable regulatory requirements. The denial or delay of any such approval would delay commercialization of our product candidates and adversely impact our potential to generate revenue, our business and our results of operations.

The research, testing, manufacturing, labeling, licensure, sale, marketing and distribution of small molecule products are subject to extensive regulation by the FDA and similar regulatory authorities in the United States and other countries, and such regulations differ from country to country. We are not permitted to market our product candidates in the United States or in any foreign countries until they receive the requisite marketing approval from the applicable regulatory authorities of such jurisdictions.

The FDA and similar foreign regulatory authorities can delay, limit or deny marketing authorization of our product candidates for many reasons, including any one or more of the following:

- our inability to demonstrate to the satisfaction of the FDA or similar foreign regulatory authority that any of our product candidates are safe and effective for their proposed indications;
- the FDA's or the applicable foreign regulatory agency's disagreement with our trial protocols, trial designs or implementation of the trials;
- the FDA or similar foreign regulatory authorities may disagree with our interpretation of data from preclinical studies or clinical trials;
- our inability to demonstrate that the clinical and other benefits of any of our product candidates outweigh any safety or other perceived risks;
- the FDA's or the applicable foreign regulatory agency's requirement for additional preclinical studies or clinical trials;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or similar foreign regulatory authorities for marketing approval, or that regulatory agencies may require us to include a larger number of patients than we anticipated;
- upon review of our clinical trial sites and data, the FDA or comparable foreign regulatory authorities may find our record keeping or the record keeping of our clinical trial sites to be inadequate or may identify other GCP deficiencies related to the trials;
- the manufacturing processes or facilities of third-party manufacturers with which we contract for clinical and commercial supplies may fail to meet the requirements of the FDA or comparable foreign regulatory authorities;
- the quality of our product candidates or other materials necessary to conduct preclinical studies or clinical trials of our product candidates, including any potential companion diagnostics, may be insufficient or inadequate;
- the medical standard of care or the approval policies or regulations of the FDA or similar foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for marketing approval; or
- the data collected from clinical trials of our product candidates may not be sufficient to the satisfaction of the FDA or comparable foreign regulatory authorities to support the submission of a new drug application or other comparable marketing submissions in foreign jurisdictions or to obtain approval of our product candidates in the United States or elsewhere.

Any of these factors, many of which are beyond our control, may result in our failing to obtain regulatory approval to market any of our product candidates, which would significantly harm our business, results of operations and prospects. Of the large number of small molecule products in development, only a small percentage successfully complete the FDA or similar regulatory approval processes and are commercialized. Even if we eventually complete clinical testing and receive marketing authorization from the FDA or similar foreign regulatory authorities for any of our product candidates, the FDA or similar foreign regulatory agency may grant approval contingent on the performance of costly additional clinical trials which may be required after approval. The FDA or similar foreign regulatory agency

also may approve our product candidates for a more limited indication or a narrower patient population than we originally requested, and the FDA similar other foreign regulatory agency, may not approve our product candidates with the labeling that we believe is necessary or desirable for the successful commercialization of such product candidates.

In addition, even if the trials are successfully completed, preclinical and clinical data are often susceptible to varying interpretations and analyses, and we cannot guarantee that the FDA or similar foreign regulatory authorities will interpret the results as we do, and more clinical trials could be required before we submit our product candidates for approval. To the extent that the results of the clinical trials are not satisfactory to the FDA or similar foreign regulatory authorities for support of a marketing application, approval of our product candidates may be significantly delayed, or we may be required to expend significant additional resources, which may not be available to us, to conduct additional clinical trials in support of potential approval of our product candidates.

Any delay in obtaining, or inability to obtain, applicable regulatory approval would delay or prevent commercialization of our product candidates and would materially adversely impact our business and prospects.

We face significant competition and if our competitors develop and market products that are more effective, safer or less expensive than our product candidates, our commercial opportunities will be negatively impacted.

The life sciences industry is highly competitive and subject to rapid and significant technological change. We are currently developing product candidates that will compete with other drugs and therapies that currently exist or are being developed. Products we may develop in the future are also likely to face competition from other drugs and therapies, some of which we may not currently be aware. We have competitors both in the United States and internationally, including major multinational pharmaceutical companies, established biotechnology companies, specialty pharmaceutical companies, universities and other research institutions. Many of our competitors have significantly greater financial, manufacturing, marketing, drug development, technical and human resources than we do. Large pharmaceutical companies, in particular, have extensive experience in clinical testing, obtaining regulatory approvals, recruiting patients and in manufacturing pharmaceutical products. These companies also have significantly greater research and marketing capabilities than we do and may also have products that have been approved or are in late stages of development and collaborative arrangements in our target markets with leading companies and research institutions. Established pharmaceutical companies may also invest heavily to accelerate discovery and development of novel compounds or to in-license novel compounds that could make the product candidates that we develop obsolete. As a result of all of these factors, our competitors may succeed in obtaining patent protection or FDA approval or discovering, developing and commercializing products in our field before we do.

Specifically, there are a large number of companies developing or marketing treatments for polycystic kidney disease, AKI, COVID-19 infection and diabetes, including many major pharmaceutical and biotechnology companies. These treatments consist both of small molecule drug products, as well as biologics that work by using next-generation antibody therapeutic platforms to address specific metabolic targets. In addition, other companies including Pfizer, Teijin, Takeda, Merck, are developing new treatments for cardiovascular, kidney disease or diabetes that may affect the progression of acute, intermittent or chronic kidney disease.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than product candidates that we may develop. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for our product candidates, which could result in our competitors establishing a strong market position before we are able to enter the market.

Smaller and other early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third-parties compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. In addition, the pharmaceutical industry is characterized by rapid technological change. If we fail to stay at the forefront of technological change, we may be unable to compete effectively. Technological advances or products developed by our competitors may render our technologies or product candidates obsolete, less competitive or not economical.

Our product candidates, for which we intend to seek approval, may face competition sooner than anticipated.

Even if we are successful in achieving regulatory approval to commercialize a product candidate ahead of our competitors, our future pharmaceutical products may face direct competition from generic and other follow-on drug products. Any of our product candidates that may achieve regulatory approval in the future may face competition from generic products earlier or more aggressively than anticipated, depending upon how well such approved products perform in the United States prescription drug market. Our ability to compete may also be affected in many cases by insurers or other third-party payors seeking to encourage the use of generic products. Generic products are expected to become available over the coming years. Even if our product candidates achieve marketing approval, they may be priced at a significant premium over competitive generic products, if any have been approved by then.

In addition to creating the 505(b)(2) NDA pathway, the Hatch-Waxman Amendments to the FDCA authorized the FDA to approve generic drugs that are the same as drugs previously approved for marketing under the NDA provisions of the statute pursuant to ANDAs. An ANDA relies on the preclinical and clinical testing conducted for a previously approved reference listed drug ("RLD"), and must demonstrate to the FDA that the generic drug product is identical to the RLD with respect to the active ingredients, the route of administration, the dosage form, and the strength of the drug and also that it is "bioequivalent" to the RLD. The FDA is prohibited by statute from approving an ANDA when certain marketing or data exclusivity protections apply to the RLD. If any such competitor or third party is able to demonstrate bioequivalence without infringing our patents, then this competitor or third party may then be able to introduce a competing generic product onto the market.

We cannot predict the interest of potential follow-on competitors or how quickly others may seek to come to market with competing products, whether approved as a direct ANDA competitor or as a 505(b)(2) NDA referencing one of our future product candidates. If the FDA approves generic versions of our product candidates in the future, should they be approved for commercial marketing, such competitive products may be able to immediately compete with us in each indication for which our product candidates may have received approval, which could negatively impact our future revenue, profitability and cash flows and substantially limit our ability to obtain a return on our investments in those product candidates.

If any of our product candidates receive regulatory approval, the approved products may not achieve broad market acceptance among physicians, patients, the medical community and third-party payors, in which case revenue generated from their sales would be limited.

Our product candidates are in preclinical and clinical development, and we may never have an approved product that is commercially successful. Even when available on the market, the commercial success of our product candidates will depend upon their acceptance among physicians, patients and the medical community. The degree of market acceptance of our product candidates will depend on a number of factors, many of which are beyond our control, including but not limited to:

- limitations, precautions, or warnings contained in the approved summary of product characteristics, patient information leaflet, prescribing information, or instructions for use;
- changes in the standard of care for the targeted indications for any approved products;
- limitations in the approved clinical indications for our approved products;
- demonstrated clinical safety and efficacy compared to other products;
- lack of significant adverse side effects, or the prevalence and severity of adverse events;
- sales, marketing and distribution support;
- availability of coverage and reimbursement amounts from managed care plans and other third-party payors;
- timing of market introduction and perceived effectiveness of competitive products;
- the cost-effectiveness of our approved products;

- availability of alternative therapies at similar or lower cost, including generic and over-the-counter products; the extent to which the product candidate is approved for inclusion on formularies of hospitals and managed care organizations;
- whether the product is designated under physician treatment guidelines as a first-line therapy or as a second- or third-line therapy for particular diseases;
- whether the product can be used effectively with other therapies to achieve higher response rates;
- adverse publicity about our approved products or favorable publicity about competitive products;
- relative convenience, ease of use, ease of administration and other perceived advantages of our products over alternative products; and
- potential product liability claims.

Even if any of our product candidates are approved, they may not achieve an adequate level of acceptance by physicians, patients and the medical community, such that we may not generate sufficient revenue from these products and we may not become or remain profitable. In addition, efforts to educate the medical community and third-party payors on the benefits of our products may require significant resources and may never be successful, which would prevent us from generating significant revenue or becoming profitable.

We may seek orphan drug status for one or more of our product candidates, but even if it is granted, we may be unable to maintain any benefits associated with orphan drug status, including market exclusivity in specific indications for XRx-008 or XRx-101 or in future product candidates that we may develop. If our competitors are able to obtain orphan product exclusivity for their products in specific indications, we may not be able to have competing products approved in those indications by the applicable regulatory authority for a significant period of time.

Regulatory authorities in some jurisdictions, including the United States and Europe, may designate drugs for relatively small patient populations as orphan drugs. Under the Orphan Drug Act, the FDA may designate a product candidate as an orphan drug if it is a drug intended to treat a rare disease or condition, which is generally defined as a patient population of fewer than 200,000 individuals annually in the United States. We may seek Orphan Drug Designation for specific indications for XRx-008 and XRx-101 and potentially for additional product candidates in the future. Orphan Drug Designation neither shortens the development time or regulatory review time of a product candidate nor gives the drug any advantage in the regulatory review or approval process.

We may seek orphan drug status for one or more of our product candidates, but the FDA may not approve any such request. Even if the FDA grants orphan drug status to one or more of our candidates, exclusive marketing rights in the United States may be limited if we seek FDA marketing approval for an indication broader than the orphan designated indication. Even if we were to obtain orphan drug exclusivity upon approval of the XRx-008 or XRx-101 product candidate programs for designated renal indications, or for any other product candidates and renal indications that receive an Orphan Drug Designation in the future, that exclusivity may not effectively protect the product from competition because different drugs with different active moieties can be approved for the same condition. Further, in the United States, even after an orphan drug is approved, the FDA can subsequently approve the same drug for the same condition submitted by a competitor if the FDA concludes that the later drug is clinically superior in that it is shown to exhibit greater safer in a substantial portion of the target population, greater effectiveness, or (in unusual cases) otherwise makes a major contribution to patient care. Accordingly, others may obtain orphan drug status for products addressing the same diseases or conditions as product candidates we are developing, thus limiting our ability to compete in the markets addressing such diseases or conditions for a significant period of time.

Even if we obtain FDA approval of any of our product candidates, we may never obtain approval or commercialize such products outside of the United States, which would limit our ability to realize their full market potential.

In order to market any product candidates outside of the United States, we must establish and comply with numerous and varying regulatory requirements of other countries regarding the safety and efficacy or prescription drug products. Clinical trials conducted in one country may not be accepted by regulatory authorities in other countries, and regulatory approval in one country does not mean that regulatory approval will be obtained in any other country. Approval procedures vary among countries and can involve additional product testing and validation and additional

administrative review periods. Seeking foreign regulatory approvals could result in significant delays, difficulties and costs for us and may require additional preclinical studies or clinical trials which would be costly and time consuming. Regulatory requirements can vary widely from country to country and could delay or prevent the introduction of our product candidates in those countries. Satisfying these and other regulatory requirements is costly, time consuming, uncertain and subject to unanticipated delays. In addition, our failure to obtain regulatory approval in any country may delay or have negative effects on the process for regulatory approval in other countries. We do not have any product candidates approved for sale in any jurisdiction, including international markets, and we do not have experience in obtaining regulatory approval in international markets. If we fail to comply with regulatory requirements in international markets or to obtain and maintain required approvals, our target market will be reduced and our ability to realize the full market potential of our product candidates will be harmed.

Unfavorable pricing regulations, third-party reimbursement practices or healthcare reform initiatives could harm our business in the future.

There is increasing pressure on biotechnology companies to reduce healthcare costs. In the United States, these pressures come from a variety of sources, such as managed care groups and institutional and government purchasers. Increased purchasing power of entities that negotiate on behalf of federal healthcare programs and private sector beneficiaries could increase pricing pressures in the future. Such pressures may also increase the risk of litigation or investigation by the government regarding pricing calculations. The biotechnology industry will likely face greater regulation and political and legal actions in the future.

Adverse pricing limitations may hinder our ability to recoup our investment in one or more future product candidates, even if our future product candidates obtain regulatory approval. Adverse pricing limitations prior to approval will also adversely affect us by reducing our commercial potential. Our ability to commercialize any potential products successfully also will depend in part on the extent to which coverage and reimbursement for these products and related treatments becomes available from third-party payors, including government health administration authorities, private health insurers and other organizations. Third-party payors decide which medications they will pay for and establish reimbursement levels. In addition, companion diagnostic tests require coverage and reimbursement separate and apart from the coverage and reimbursement for their companion pharmaceutical or biological products. Similar challenges to obtaining coverage and reimbursement, applicable to pharmaceutical or biological products, will apply to companion diagnostics.

A significant trend in the U.S. 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. Increasingly, third-party payors are requiring that 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 for any product that we commercialize in the future and, if reimbursement is available, what the level of reimbursement will be. Reimbursement may impact the demand for, or the price of, any product for which we obtain marketing approval in the future. If reimbursement is not available or is available only to limited levels, we may not be able to successfully commercialize any product candidate that we successfully develop.

There may be significant delays in obtaining reimbursement for approved products, and coverage may be more limited than the purposes for which the product is approved by the FDA or regulatory authorities in other countries. Moreover, eligibility for reimbursement does not imply that any product will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution. Interim payments for new products, if applicable, may also not be sufficient to cover our costs and may not be made permanent. Payment rates may vary according to the use of the product and the clinical setting in which it is used, may be based on payments allowed for lower cost products that are already reimbursed and may be incorporated into existing payments for other services. Net prices for products may be reduced by mandatory discounts or rebates required by third-party payors and by any future relaxation of laws that presently restrict imports of products from countries where they may be sold at lower prices than in the United States. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement policies, but also have their own methods and approval process apart from Medicare coverage and reimbursement determinations. Accordingly, one third-party payor's determination to provide coverage for a product does not assure that other payors will also provide coverage for the product. Our inability to promptly obtain coverage and adequate reimbursement from third-party payors for approved products could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize potential products and our overall financial condition.

If the market opportunities for any product candidate that we or our strategic partners develop are smaller than we believe they are, our revenue may be adversely affected and our business may suffer.

We intend to initially focus our independent product candidate development on treatments for ADPKD and AKI due to COVID-19 infections. Our projections of addressable patient populations that have the potential to benefit from treatment with our product candidates are based on estimates. If any of the foregoing estimates are inaccurate, the market opportunities for any of our product candidates could be significantly diminished and have an adverse material impact on our business.

We may expend our limited resources to pursue a particular product candidate or indication and fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and managerial resources, we focus on research programs, therapeutic platforms and product candidates that we identify for specific indications. As a result, we may forego or delay pursuit of opportunities with other therapeutic platforms or product candidates or for other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs, therapeutic platforms and product candidates for specific indications may not yield any commercially viable products. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights.

We may not be successful in our efforts to use and expand our therapeutic platforms to build a pipeline of product candidates.

An important element of our strategy is to use and expand our therapeutic platforms to build a pipeline of product candidates and progress these product candidates through clinical development for the treatment of multiple diseases. Although our research and development efforts to date have resulted in a pipeline of product candidates directed at various diseases, we may not be able to develop product candidates that are safe and effective. In addition, although we expect that our therapeutic platforms will allow us to develop a steady stream of product candidates, they may not prove to be successful at doing so. Even if we are successful in continuing to build our pipeline, the potential product candidates that we identify may not be suitable for clinical development, including as a result of being shown to have harmful side effects or other characteristics that indicate that they are unlikely to be products that will receive marketing approval and achieve market acceptance. If we do not continue to successfully develop and begin to commercialize product candidates, we will face difficulty in obtaining product revenue in future periods, which could result in significant harm to our financial position and adversely affect our share price.

Even if we receive regulatory approval to commercialize any of the product candidates that we develop, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense. If we fail to comply with United States and foreign regulatory requirements, regulatory authorities could limit or withdraw any marketing or commercialization approvals we may receive and subject us to other penalties. Any unfavorable regulatory action may materially and adversely affect our future financial condition and business operations.

Even if we receive marketing and commercialization approval for a product candidate, we will be subject to continuing post-marketing regulatory requirements. Our potential products, further development activities and manufacturing and distribution of a future product, once developed and determined, will be subject to extensive and rigorous regulation by numerous government agencies, including the FDA and comparable foreign agencies. To varying degrees, each of these agencies monitors and enforces our compliance with laws and regulations governing the development, testing, manufacturing, labeling, marketing, distribution, and the safety and effectiveness of our therapeutic candidates and, if approved, our future products. The process of obtaining marketing approval or clearance from the FDA and comparable foreign bodies for new products, or for enhancements, expansion of the indications or modifications to existing products, could:

- take a significant, indeterminate amount of time;
- require the expenditure of substantial resources;

- involve rigorous preclinical and clinical testing, and possibly post-market surveillance;
- require design changes of our potential products; or
- result in our never being granted the regulatory approval we seek.

Any of these occurrences may cause our operations or potential for success to suffer, harm our competitive standing and result in further losses that adversely affect our financial condition. In addition, any regulatory approvals that we receive for our product candidates may be subject to limitations on the approved indicated uses for which the product may be marketed or subject to certain conditions of approval, and may contain requirements for potentially costly post-approval trials, including Phase 4 clinical trials, and surveillance to monitor the safety and efficacy of the marketed product.

The FDA, as well as its foreign regulatory counterparts, also have significant post-market authority, including the authority to require labeling changes based on new safety information and to require post-market studies or clinical trials to evaluate safety risks related to the use of a product or to require withdrawal of the product from the market. We will be required to report adverse reactions and production problems, if any, to the FDA and comparable foreign regulatory authorities. Any new legislation addressing drug safety issues could result in delays in product development or commercialization, or increased costs to assure compliance. Additionally, the FDA regulates the promotional claims that may be made about prescription products, such as our products, if approved. In particular, a product may not be promoted for uses that are not approved by the FDA as reflected in the product's approved labeling. However, we may share truthful and not misleading information with healthcare providers and payors that is otherwise consistent with the product's FDA approved labeling.

We will have ongoing responsibilities under these and other FDA and international regulations, both before and after a product candidate is approved and commercially released. Compliance with applicable regulatory requirements is subject to continual review and is monitored rigorously through periodic inspections by the FDA and foreign regulatory agencies. In addition, manufacturers and manufacturers' facilities are required to continuously comply with FDA and comparable foreign regulatory authority requirements, including ensuring quality control and manufacturing procedures conform to cGMP regulations and corresponding foreign regulatory manufacturing requirements. Accordingly, we and our contract manufacturers will be subject to continual review and inspections to assess compliance with cGMP and adherence to commitments made in any NDA submission to the FDA or any other type of domestic or foreign marketing application.

If a regulatory agency discovers previously unknown problems with a future product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, or it disagrees with the promotion, marketing or labeling of a product, the regulatory agency may impose restrictions on that product or on us, including requiring withdrawal of the product from the market. Accordingly, if we or our collaborators, manufacturers or service providers fail to comply with applicable continuing regulatory requirements in the United States or foreign jurisdictions in which we seek to market our products, we or they may be subject to, among other things:

- restrictions on the marketing or manufacturing of the product;
- withdrawal of the product from the market or voluntary or mandatory product recalls;
- fines, warning letters, adverse regulatory inspection findings, or holds on clinical trials;
- delay of approval or refusal by the FDA or another applicable regulatory authority to approve pending applications or supplements to approved applications filed by us or our strategic partners;
- suspension or revocation of a product's regulatory approvals;
- product seizure or administrative detention of products, or refusal to permit the import or export of products; and
- operating restrictions, exclusion of eligibility from government contracts, injunctions or the imposition of civil or criminal penalties or prosecution.

Occurrence of any of the foregoing could have a material and adverse effect on our business and results of operations. Any adverse regulatory action, depending on its magnitude, may restrict us from effectively commercializing our potential products and harm our business, and any government investigation of alleged violations of law would require us to expend significant time and resources in response and could generate adverse publicity. In addition, negative publicity and product liability claims resulting from any adverse regulatory action or government investigation could have a material adverse effect on our business, financial condition, results of operations, and prospects.

Further, the FDA's or other regulatory authority's policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained, which would adversely affect our business, prospects and ability to achieve or sustain profitability.

Our business entails a significant risk of product liability and our ability to obtain sufficient insurance coverage could have a material and adverse effect on our business, financial condition, results of operations and prospects. If any product liability lawsuits are successfully brought against us or any of our strategic partners, we may incur substantial liabilities and may be required to limit commercialization of our product candidates.

We are exposed to significant product liability risks inherent in the development, testing, manufacturing and marketing of investigational product candidates for which we or our collaborators may conduct clinical trials. In particular, we face an inherent risk of product liability lawsuits related to the testing of our product candidates in seriously ill patients, and will face an even greater risk if product candidates are approved by regulatory authorities and introduced commercially. Product liability claims may be brought against us or our strategic partners by participants enrolled in our clinical trials, as well as patients, healthcare providers or others using, administering or selling any of our future approved products. Product liability claims could delay or prevent completion of our development programs. If we succeed in marketing any approved products, these claims could result in an FDA investigation of the safety and effectiveness of our future commercial products, our manufacturing processes and facilities (or the manufacturing processes and facilities of our third-party manufacturers) or our marketing programs, a recall of our products or more serious enforcement action, limitations on the approved indications for which the product may be used or suspension or withdrawal of approvals.

If we cannot successfully defend ourselves against any such claims, we may incur substantial liabilities. Regardless of their merit or eventual outcome, liability claims may result in:

- decreased demand for any future approved products;
- injury to our reputation;
- withdrawal of clinical trial participants;
- termination of clinical trial sites or entire trial programs;
- increased regulatory scrutiny;
- significant litigation costs;
- substantial monetary awards to or costly settlement with patients or other claimants;
- product recalls or a change in the indications for which products may be used;
- loss of revenue;
- a decline in our stock price;
- diversion of management and scientific resources from our business operations; and
- the inability to commercialize our product candidates.

If any of our product candidates are approved for commercial sale, we will be highly dependent upon consumer perceptions of us and the safety and quality of our products. We could be adversely affected if we are subject to negative publicity. We could also be adversely affected if any of our products or any similar products manufactured and

distributed by other companies prove to be, or are asserted to be, harmful to patients. Because of our dependence upon consumer perceptions, any adverse publicity associated with illness or other adverse effects resulting from patients' use or misuse of our products or any similar products distributed by other companies could have a material adverse impact on our financial condition or results of operations. Any insurance we have or may obtain may not provide sufficient coverage against potential liabilities. Furthermore, clinical trial and product liability insurance is becoming increasingly expensive.

We may need to have in place increased product liability coverage when we begin the commercialization of our product candidates.

Insurance coverage is becoming increasingly expensive. As a result, we may be unable to maintain or obtain sufficient insurance at a reasonable cost to protect us against losses that could have a material adverse effect on our business. A successful product liability claim or series of claims brought against us, particularly if judgments exceed any insurance coverage we may have, could decrease our cash resources and adversely affect our business, financial condition and results of operation.

Security breaches, loss of data and other disruptions could compromise sensitive information related to our business or protected health information or prevent us from accessing critical information and expose us to liability, which could adversely affect our business and our reputation.

In the ordinary course of our business, we collect and store terabytes of sensitive data, including legally protected health information, personally identifiable information, intellectual property and proprietary business information owned or controlled by ourselves or our strategic partners. We manage and maintain our applications and data by utilizing a combination of on-site systems and third-party cloud-based data center systems. These applications and data encompass a wide variety of business-critical information, including research and development information, commercial information and business and financial information. The primary risks we face relative to protecting this critical information include loss of access risk, inappropriate disclosure risk, inappropriate modification risk and the risk of being unable to adequately monitor our controls over the first three risks.

The secure processing, storage, maintenance and transmission of this critical information are vital to our operations and business strategy, and we devote significant resources to protecting such information. Although we take measures to protect sensitive information from unauthorized access or disclosure, our information technology and infrastructure and that of any third-party billing and collections provider we may utilize, may be vulnerable to attacks by hackers or viruses or breached due to employee error, malfeasance or other disruptions. Any such breach or interruption could compromise our networks and the information stored there could be accessed by unauthorized parties, publicly disclosed, lost or stolen. Any such access, disclosure or other loss of information could result in legal claims or proceedings, liability under laws that protect the privacy of personal information, such the federal privacy rules for health information promulgated under the Health Insurance Portability and Accountability Act of 1996 (HIPAA) or state securities laws, and regulatory penalties. We are in the process of implementing security measures to prevent unauthorized access to our valuable trade secrets, patient data, and other confidential information, there is no guarantee that we can continue to protect our systems from breach. Unauthorized access, loss or dissemination could also disrupt our operations, including our ability to conduct our analyses, provide test results, bill payors or providers, process claims and appeals, conduct research and development activities, collect, process and prepare company financial information, provide information about any future products, manage the administrative aspects of our business and damage our reputation, any of which could adversely affect our business.

The U.S. Office of Civil Rights in the Department of Health and Human Services enforces the HIPAA privacy and security rules and may impose penalties on us or our CROs if we, or our CROs, do not fully comply with requirements of HIPAA. Penalties will vary significantly depending on factors such as whether we, or our CROs, knew or should have known of the failure to comply, or whether our failure, or that of our CROs, to comply was due to willful neglect. These penalties include civil monetary penalties of US$100 to US$50,000 per violation, up to an annual cap of US$1,500,000 for identical violations. A person who knowingly obtains or discloses individually identifiable health information in violation of HIPAA may face a criminal penalty of up to US$50,000 per violation and up to one-year imprisonment. The criminal penalties increase to US$100,000 per violation and up to five years imprisonment if the wrongful conduct involves false pretenses, and to US$250,000 per violation and up to 10-years imprisonment if the wrongful conduct involves the intent to sell, transfer, or use identifiable health information for commercial advantage, personal gain, or malicious harm. The U.S. Department of Justice is responsible for criminal prosecutions

under HIPAA. Furthermore, in the event of a breach as defined by HIPAA, we have specific reporting requirements to the Office of Civil Rights under the HIPAA regulations as well as to affected individuals, and we may also have additional reporting requirements to other state and federal regulators, including the attorney generals of various states, the Federal Trade Commission, and to the media. Depending on the data breached, we may also be obligated under the laws of certain states to provide credit monitoring services to affected individuals for a year or more. Issuing such notifications and providing such services can be costly, time and resource intensive, and can generate significant negative publicity. Breaches of HIPAA or state data protection laws may also constitute contractual violations that could lead to contractual damages or terminations.

In addition, the interpretation and application of consumer, health-related and data protection laws in the United States, the European Union, or EU, and elsewhere are often uncertain, contradictory and in flux. It is possible that these laws may be interpreted and applied in a manner that is inconsistent with our practices. If so, this could result in government-imposed fines or orders requiring that we change our practices, which could adversely affect our business. In addition, these privacy and security regulations vary between states, may differ significantly from country to country, and may vary based on whether testing or processing of data is performed in the United States or in the local country. Complying with these various laws could cause us to incur substantial costs or require us to change our business practices and compliance procedures in a manner adverse to our business.

For example, under the EU General Data Protection Regulation ("GDPR") we would be obligated to ensure that we maintain appropriate technical and organizational measures to ensure a level of security appropriate to the risk for all personal data, and heightened measures for health-related information, which can pose a significant risk to individuals if it is breached or otherwise compromised. The GDPR also contains numerous complex requirements, with requirements, which we may inadvertently fail to achieve despite our reasonable efforts. Violations of the GDPR may result in fines up to up €20 million, or 4% of the previous financial year's worldwide annual revenue, whichever is the higher of the two.

We may also be subject to litigation for data security breaches under various state laws. The California Consumer Privacy Act ("CCPA"), which has been effective only since January 1, 2020, has already resulted in numerous class action lawsuits for companies suffering data breaches in which they are accused of failing to use reasonable security measures to protect the personal information of California residents. In addition, if we violate the CCPA and we are not able to cure the violation within thirty (30) days of notice, we may be subject to penalties ranging from US$2,500 for a non-intentional violation to US$7,500 for an intentional violation. Many other states are in the process of adopting similar laws, so we may potentially face litigation and penalties under the laws of other states as well.

Furthermore, the loss of clinical trial data from completed or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. Likewise, we rely on other third parties for the manufacture of our product candidates and to conduct clinical trials, and similar events relating to their computer systems could also have a material adverse effect on our business.

Current and future legislation may increase the difficulty and cost for us to commercialize any products that we or our strategic partners develop and affect the prices we may obtain.

The United States and some foreign jurisdictions are considering or have enacted a number of legislative and regulatory proposals to change healthcare systems in ways that could affect our ability to sell any of our product candidates profitably, if such product candidates are approved for sale. Among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives. Moreover, among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access.

In addition, there has been heightened governmental scrutiny recently over the manner in which drug manufacturers set prices for their marketed products, which have resulted in several Congressional inquiries and proposed bills designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drug products. Individual states in the United States have also increasingly passed legislation and implemented regulations designed to control pharmaceutical product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in

some cases, designed to encourage importation from other countries and bulk purchasing. In December 2020, the U.S. Supreme Court held unanimously that federal law does not preempt the states' ability to regulate pharmaceutical benefit managers (PBMs) and other members of the healthcare and pharmaceutical supply chain, an important decision that may lead to further and more aggressive efforts by states in this area.

Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical products. We cannot be sure whether additional legislative changes will be enacted, or whether the FDA regulations, guidance or interpretations will be changed, or what the impact of such changes on the marketing approvals of our product candidates, if any, may be. In addition, increased scrutiny by the U.S. Congress of the FDA's approval process may significantly delay or prevent marketing approval, as well as subject us to more stringent product labeling and post-approval testing and other requirements.

We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we or our strategic partners are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we or our strategic partners are not able to maintain regulatory compliance, our product candidates may lose any marketing approval that may have been obtained and we may not achieve or sustain profitability, which would adversely affect our business.

We are subject to U.S. and certain foreign export and import controls, sanctions, embargoes, anti-corruption laws, and anti-money laundering laws and regulations. Compliance with these legal standards could impair our ability to compete in domestic and international markets. We can face criminal liability and other serious consequences for violations which can harm our business.

We are subject to laws and regulations affecting international trade and transactions administered by the U.S. Government and other governments in the jurisdictions in which we conduct business, including but not limited to the U.S. Export Administration Regulations, U.S. Customs Regulations, various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Control, the U.S. Foreign Corrupt Practices Act of 1977, as amended, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. International Travel Act of 1977, and various anti-money laundering laws and regulations. Anti-corruption laws are interpreted broadly and generally prohibit companies and their employees, agents, contractors, and other representatives from authorizing, promising, offering, or providing, directly or indirectly, payments or anything else of value to recipients in the public sector for the purpose of influencing official action or decision, inducing an unlawful act, inducing official influence over government action, or securing an improper advantage. We may engage third parties for clinical trials outside of the United States, to sell our products abroad once we enter a commercialization phase, or to obtain necessary permits, licenses, patent registrations, and other regulatory approvals. We may have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities, and other organizations. We can be held liable for the illegal activities of our employees, agents, contractors, and other representatives, even if we do not explicitly authorize or have actual knowledge of such activities. Any violation of the laws and regulations described above may result in substantial civil and criminal fines and penalties, imprisonment, the loss of export or import privileges, debarment from participation in government procurements, tax reassessments, civil litigation, reputational harm, and other consequences.

We currently have no marketing and sales organization and have no experience in marketing prescription drug products. If we are unable to establish marketing and sales capabilities or enter into agreements with third parties to market and sell our product candidates, if approved for commercial sale, we may not be able to generate product revenue.

We currently have no sales, marketing or distribution capabilities in any country and have no experience in marketing products. We intend to develop an in-house marketing organization and sales force, which will require significant capital expenditures, management resources and time. We will have to compete with other pharmaceutical and biotechnology companies to recruit, hire, train and retain marketing and sales personnel.

If we are unable or decide not to establish internal sales, marketing and distribution capabilities, we will pursue collaborative arrangements regarding the sales and marketing of our product candidates, if licensed. However, there can be no assurance that we will be able to establish or maintain such collaborative arrangements, or if we are able to do so, that they will have effective sales forces. Any revenue we receive will depend upon the efforts of such third parties, which may not be successful. We may have little or no control over the marketing and sales efforts of such

third parties and our revenue from product sales may be lower than if we had commercialized our product candidates ourselves. We also face competition in our search for third parties to assist us with the sales and marketing efforts of our product candidates.

There can be no assurance that we will be able to develop in-house sales and distribution capabilities or establish or maintain relationships with third-party collaborators to commercialize any product in the United States or overseas for which we are able to obtain regulatory approval.

The COVID-19 pandemic may materially and adversely affect our business and financial results

Our business could be adversely affected by health epidemics in regions where we have clinical trial sites or other business operations, and could cause significant disruption in the operations of third-party manufacturers and CROs upon whom we rely. In December 2019, a novel strain of coronavirus, which causes the disease known as COVID-19, was reported to have surfaced in Wuhan, China. Since then, the novel strain of coronavirus has spread globally. In March 2020, the World Health Organization declared the COVID-19 outbreak a pandemic and the U.S. government imposed travel restrictions on travel between the United States, Europe and certain other countries. Further, the President of the United States declared the COVID-19 pandemic a national emergency, invoking powers under the Stafford Act, the legislation that directs federal emergency disaster response. We have a registered office in Calgary, Alberta, Canada, and engage contract laboratories in various locations in North America. Effective December 13, 2020, the Province of Alberta ordered that all employees work from home unless the employer requires the employee's physical presence to operate effectively, in order to mitigate the impact of the COVID-19 pandemic. Subsequent orders permitted a phased and progressive opening of businesses and permitted some limited gatherings at private residences and public venues. On July 1, 2021, Alberta entered Stage 3 of their reopening plan, lifting all public health measures, except for isolation/quarantine requirements and some restrictions in health care settings and public transit. However, a resurgence in the spread of severity of the pandemic may result in Alberta reinstating certain restrictions.

In response to public health directives and orders and to help minimize the risk of the virus to our employees, we have taken precautionary measures, including implementing work-from-home policies for certain employees. The effects of our work-from-home policies may negatively impact productivity, disrupt our business and delay our clinical programs and timelines and any future clinical trials, the magnitude of which will depend, in part, on the length and severity of the restrictions and other limitations on our ability to conduct our business in the ordinary course. These and similar, and perhaps more severe, disruptions in our operations could negatively impact our business, financial condition and results of operations, including our ability to obtain financing.

Quarantines, shelter-in-place and similar government orders, or the perception that such orders, shutdowns or other restrictions on the conduct of business operations could occur, related to COVID-19 or other infectious diseases could impact personnel at third-party manufacturing facilities in Canada, the United States and other countries, or the availability or cost of materials, which would disrupt our supply chain.

In addition, any clinical trials for our product candidates may be further affected by the COVID-19 pandemic, including:

- delays or difficulties in enrolling patients in the clinical trial, including patients may not be able to comply with clinical trial protocols if quarantines impede patient movement or interrupt healthcare services;
- delays or difficulties in clinical site initiation, including difficulties in recruiting clinical site investigators and clinical site staff;
- diversion or prioritization of healthcare resources away from the conduct of clinical trials and towards the COVID-19 pandemic, including the diversion of hospitals serving as our clinical trial sites and hospital staff supporting the conduct of our clinical trials, who, as healthcare providers, may have heightened exposure to the coronavirus that leads to COVID-19 infections and adversely impact our clinical trial operations;
- interruption of key clinical trial activities, such as clinical trial site monitoring, due to limitations on travel imposed or recommended by federal, state or provincial governments, employers and others; and
- limitations in employee resources that would otherwise be focused on the conduct of our clinical trials, including because of sickness of employees or their families or the desire of employees to avoid contact with large groups of people.

Risks Related to Our Dependence on Third Parties

Our existing strategic partnerships are important to our business, and future strategic partnerships will likely also be important to us. If we are unable to maintain our strategic partnerships, or if these strategic partnerships are not successful, our business could be adversely affected.

We have limited capabilities for product candidate development and do not yet have any capability for sales, marketing or distribution.

Accordingly, we have entered into strategic partnerships with other companies that we believe can provide such capabilities, including collaboration and license agreements with the Icahn School of Medicine at Mt. Sinai, NY, University of Florida, Dr. Richard Johnson, and Dr. Takahiko Nakagawa. Our existing strategic partnerships, and any future strategic partnerships we enter into, may pose a number of risks, including the following:

- strategic partners have significant discretion in determining the efforts and resources that they will apply to these partnerships;
- strategic partners may not perform their obligations as expected;
- strategic partners may not pursue development and commercialization of any product candidates that achieve regulatory approval or may elect not to continue or renew development or commercialization programs based on clinical trial results, changes in the partners' strategic focus or available funding, or external factors, such as an acquisition, that divert resources or create competing priorities;
- strategic partners may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;
- strategic partners could independently develop, or develop with third parties, products that compete directly or indirectly with our product candidates if the strategic partners believe that competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than our product candidates;
- product candidates discovered in collaboration with us may be viewed by our strategic partners as competitive with their own product candidates or products, which may cause strategic partners to cease to devote resources to the commercialization of our product candidates;
- a strategic partner with marketing and distribution rights to one or more of our product candidates that achieve regulatory approval may not commit sufficient resources to the marketing and distribution of such product candidates;
- disagreements with strategic partners, including disagreements over proprietary rights, contract interpretation or the preferred course of development, might cause delays or termination of the research, development or commercialization of product candidates, might lead to additional responsibilities for us with respect to product candidates, or might result in litigation or arbitration, any of which would be time-consuming and expensive;
- strategic partners may not properly maintain or defend our intellectual property rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential litigation;
- strategic partners may infringe the intellectual property rights of third parties, which may expose us to litigation and potential liability; and
- strategic partnerships may be terminated for the convenience of the partner and, if terminated, we could be required to raise additional capital to pursue further development or commercialization of the applicable product candidates.

We may not realize the anticipated benefits of our strategic partnerships.

If our strategic partnerships do not result in the successful development and commercialization of product candidates or if one of our partners terminates its agreement with us, we may not receive any future research funding or milestone or royalty payments under the collaboration. Moreover, our estimates of the potential revenue we are eligible to receive under our strategic partnerships may include potential payments in respect of therapeutic programs for which our partners have discontinued development or may discontinue development in the future. Furthermore, our strategic partners may not keep us informed as to the status of their in-house research activities and they may fail to exercise options embedded within certain agreements. Any discontinuation of product development by our strategic partners could reduce the amounts receivable under our strategic partnerships below the stated amounts we are eligible to receive under those agreements. If we do not receive the funding we expect under these agreements, our development of our therapeutic platforms and product candidates could be delayed and we may need additional resources to develop product candidates and our therapeutic platforms. All of the risks relating to product development, regulatory approval and commercialization described in this prospectus also apply to the activities of our program strategic partners.

Additionally, subject to its contractual obligations to us, if one of our strategic partners is involved in a business combination, the partner might deemphasize or terminate the development or commercialization of any product candidate licensed to it by us. If one of our strategic partners terminates its agreement with us, we may find it more difficult to attract new partners.

We face significant competition in seeking new strategic partners.

For some of our product candidates, we may in the future determine to collaborate with additional pharmaceutical and biotechnology companies for development and potential commercialization of therapeutic products. Our ability to reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the strategic partner's resources and expertise, the terms and conditions of the proposed collaboration and the proposed strategic partner's evaluation of a number of factors. These factors may include the design or results of clinical trials, the likelihood of approval by the FDA or similar regulatory authorities outside the United States, the potential market for the subject product candidate, the costs and complexities of manufacturing and delivering such product candidate to patients, the potential of competing products, the existence of uncertainty with respect to our ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge and industry and market conditions generally. The strategic partner may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with us for our product candidate.

Strategic partnerships are complex and time-consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future strategic partners. If we are unable to reach agreements with suitable strategic partners on a timely basis, on acceptable terms, or at all, we may have to curtail the development of a product candidate, reduce or delay one or more of our other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to fund and undertake development or commercialization activities on our own, we may need to obtain additional expertise and additional capital, which may not be available to us on acceptable terms or at all. If we fail to enter into strategic partnerships and do not have sufficient funds or expertise to undertake the necessary development and commercialization activities, we may not be able to further develop our product candidates or bring them to market or continue to develop our therapeutic platforms and our business may be materially and adversely affected.

We rely on third parties to monitor, support, conduct and oversee clinical trials of the product candidates that we are developing and, in some cases, to maintain regulatory files for those product candidates. We may not be able to obtain regulatory approval for our product candidates or commercialize any products that may result from our development efforts, if we are not able to maintain or secure agreements with such third parties on acceptable terms, if these third parties do not perform their services as required, or if these third parties fail to timely transfer any regulatory information held by them to us.

We rely on entities outside of our control, which may include academic institutions, CROs, hospitals, clinics and other third-party strategic partners, to monitor, support, conduct and oversee preclinical studies and clinical trials of our current and future product candidates. We also rely on third parties to perform clinical trials on our current and

future product candidates when they reach that stage. As a result, we have less control over the timing and cost of these studies and the ability to recruit trial subjects than if we conducted these trials with our own personnel.

If we are unable to maintain or enter into agreements with these third parties on acceptable terms, or if any such engagement is terminated prematurely, we may be unable to enroll patients on a timely basis or otherwise conduct our trials in the manner we anticipate. In addition, there is no guarantee that these third parties will devote adequate time and resources to our studies or perform as required by our contract or in accordance with regulatory requirements, including maintenance of clinical trial information regarding our product candidates. If these third parties fail to meet expected deadlines, fail to transfer to us any regulatory information in a timely manner, fail to adhere to protocols or fail to act in accordance with regulatory requirements or our agreements with them, or if they otherwise perform in a substandard manner or in a way that compromises the quality or accuracy of their activities or the data they obtain, then clinical trials of our product candidates may be extended or delayed with additional costs incurred, or our data may be rejected by the FDA or other regulatory agencies.

Ultimately, we are responsible for ensuring that each of our clinical trials is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards, and our reliance on third parties does not relieve us of our regulatory responsibilities.

We and our CROs are required to comply with cGCP regulations and guidelines enforced by the FDA and comparable foreign regulatory authorities for product candidates in clinical development. Regulatory authorities enforce these cGCP regulations through periodic inspections of clinical trial sponsors, principal investigators and clinical trial sites. If we or any of our CROs fail to comply with applicable cGCP regulations, the clinical data generated in our clinical trials may be deemed unreliable and our submission of marketing applications may be delayed or the FDA may require us to perform additional clinical trials before approving our marketing applications. Upon inspection, the FDA could determine that any of our clinical trials fail or have failed to comply with applicable cGCP regulations. In addition, our clinical trials must be conducted with product produced under the cGMP regulations enforced by the FDA, and our clinical trials may require a large number of test subjects. Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process and increase our costs. Moreover, our business may be implicated if any of our CROs violates federal or state fraud and abuse or false claims laws and regulations or healthcare privacy and security laws.

Part of our reliance and partnerships with CROs includes reliance on third-party doctors, nurses or healthcare workers in our clinical trials. Fraud caused by third party errors or omissions, including intentional or unintentional failure to administer drugs as whole, failure to administer in a timely fashion, failure to accurately record data or complete the assigned measures or tests in order to complete the data that is part of the clinical trial presents risk. Any of these failures can have negative impact on trial outcomes, processes, timeliness and cost. While it falls under a CRO's delegated responsibilities, ultimately we have oversight as the sponsor and must act accordingly.

If any of our clinical trial sites terminate for any reason, we may experience the loss of follow-up information on patients enrolled in our ongoing clinical trials unless we are able to transfer the care of those patients to another qualified clinical trial site. Further, if our relationship with any of our CROs is terminated, we may be unable to enter into arrangements with alternative CROs on commercially reasonable terms, or at all.

Switching or adding CROs or other suppliers can involve substantial cost and require extensive management time and focus. In addition, there is a natural transition period when a new CRO or supplier commences work. As a result, delays may occur, which can materially impact our ability to meet our desired clinical development timelines. If we are required to seek alternative supply arrangements, the resulting delays and potential inability to find a suitable replacement could materially and adversely impact our business.

We rely on third parties to supply and manufacture our product candidates, and we expect to continue to rely on third parties to manufacture and supply our product candidates, if approved for commercial marketing. The development of product candidates and the commercialization of any product candidates, if approved, could be stopped, delayed or made less profitable if any of these third parties fail to provide us with sufficient quantities of product candidates or approved products, fail to do so at acceptable quality levels or prices, or fail to maintain or achieve satisfactory regulatory compliance.

We do not currently have, nor do we plan to acquire, the infrastructure or capability internally to develop and manufacture our product candidates for use in the conduct of our trials or for commercial supply, if our product

candidates are approved for commercial marketing. Instead, we rely on, and expect to continue to rely on third-party providers to manufacture the supplies for our preclinical studies and clinical trials. We currently rely on a limited number of third-party contract manufacturers for all of the required raw materials for our preclinical research and clinical trials, as well as for the manufacture of our product candidates. To the extent any of our manufacturing partners is unable to fulfill these obligations in a timely manner, including as a result of circumstances relating to the COVID-19 pandemic, our clinical trials may be delayed and our business may be adversely affected. In general, reliance on third-party providers may expose us to more risk than if we were to manufacture our product candidates ourselves. We do not control the operational processes of the contract manufacturing organizations with whom we contract, and we are dependent on these third parties for the production of our product candidates in accordance with relevant regulations (such as cGMP), which include, among other things, quality control and the maintenance of records and documentation.

Risks Related to Our Intellectual Property

Our commercial success depends significantly on our ability to operate without infringing the patents and other proprietary rights of third parties.

Our success will depend in part on our ability to operate without infringing the proprietary rights of third parties. Other entities may have or obtain patents or proprietary rights that could limit our ability to make, use, sell, offer for sale or import our future approved products or impair our competitive position.

We are also aware of third party patents and patent applications containing claims that are related to administering a xanthine oxidase inhibitor as an adjunct in combination with other primary compounds for treating related indications. If our product candidates or our strategic partners' products were to be found to infringe any such patents, and we were unable to invalidate those patents, or if licenses for them are not available on commercially reasonable terms, or at all, our business could be materially harmed. These patents may not expire before we receive marketing authorization for our product candidates, and could delay the commercial launch or one or more future products. There is also no assurance that there are not third-party patents or patent applications of which we are aware, but which we do not believe are relevant to our business, which may, nonetheless, ultimately be found to limit our ability to make, use, sell, offer for sale or import our future approved products or impair our competitive position.

Patents that we may ultimately be found to infringe could be issued to third parties. Third parties may have or obtain valid and enforceable patents or proprietary rights that could block us from developing product candidates using our technology. Our failure to obtain a license to any technology that we require may materially harm our business, financial condition and results of operations. Moreover, our failure to maintain a license to any technology that we require may also materially harm our business, financial condition and results of operations. Furthermore, we would be exposed to a threat of litigation.

In the pharmaceutical industry, significant litigation and other proceedings regarding patents, patent applications, trademarks and other intellectual property rights have become commonplace. The types of situations in which we may become a party to such litigation or proceedings include:

- we or our strategic partners may initiate litigation or other proceedings against third parties seeking to invalidate the patents held by those third parties, to obtain a judgment that our product candidates or processes do not infringe those third parties' patents or to obtain a judgement that those parties' patents are unenforceable;
- if our competitors file patent applications that claim technology also claimed by us or our licensors, we or our licensors may be required to participate in interference, derivation or opposition proceedings to determine the priority of invention, which could jeopardize our patent rights and potentially provide a third-party with a dominant patent position;
- if third parties initiate litigation claiming that our processes or product candidates infringe their patent or other intellectual property rights or initiating other proceedings, including post-grant proceedings and inter partes reviews, we and our strategic partners will need to defend against such proceedings; and

- if a license to necessary technology is terminated, the licensor may initiate litigation claiming that our processes or product candidates infringe or misappropriate their patent or other intellectual property rights and/or that we breached our obligations under the license agreement, and we and our strategic partners would need to defend against such proceedings.

These lawsuits would be costly and could affect our results of operations and divert the attention of our management and scientific personnel. Some of our competitors may be able to sustain the cost of such litigation and proceedings more effectively than we can because of their substantially greater resources. There is a risk that a court would decide that we or our strategic partners are infringing the third party's patents and would order us or our strategic partners to stop the activities covered by the patents. In that event, we or our strategic partners may not have a viable alternative to the technology protected by the patent and may need to halt work on the affected product candidate or cease commercialization of an approved product. In addition, there is a risk that a court will order us or our strategic partners to pay third party damages or some other monetary award, depending upon the jurisdiction. An adverse outcome in any litigation or other proceeding could subject us to significant liabilities to third parties, potentially including treble damages and attorneys' fees if we are found to have willfully infringed, and we may be required to cease using the technology that is at issue or to license the technology from third parties. We may not be able to obtain any required licenses on commercially acceptable terms or at all. Any of these outcomes could have a material adverse effect on our business.

If we are unable to obtain, maintain and enforce patent and trade secret protection for our product candidates and related technology, our business could be materially harmed.

Our strategy depends on our ability to identify and seek patent protection for our discoveries. This process is expensive and time consuming, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner or in all jurisdictions where protection may be commercially advantageous. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Moreover, in some circumstances, we may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the patents, covering technology that we have licensed from third parties. Therefore, our owned or in-licensed patents and patent applications may not be prosecuted and enforced in a manner consistent with the best interests of our business. Our patent applications cannot be enforced against third parties practicing the technology claimed in such applications unless, and until, patents issues from such applications, and then only to the extent the issued claims cover the technology. The patent applications that we own or in-license may fail to result in issued patents with claims that cover our current and future product candidates in the United States or in other foreign countries.

Moreover, the patent position of pharmaceutical companies generally is highly uncertain, involves complex legal and factual questions and has in recent years been the subject of much litigation. The issuance of a patent does not ensure that it is valid or enforceable. Third parties may challenge the validity, enforceability or scope of our issued patents, and such patents may be narrowed, invalidated, circumvented, or deemed unenforceable. In addition, changes in law may introduce uncertainty in the enforceability or scope of patents owned by pharmaceutical companies. If, our patents are narrowed, invalidated or held unenforceable, third parties may be able to commercialize our technology or product candidates and compete directly with us without payment to us. There is no assurance that all potentially relevant prior art relating to our patents and patent applications has been found, and such prior art could potentially invalidate one or more of our patents or prevent a patent from issuing from one or more of our pending patent applications. There is also no assurance that there is not prior art of which we are aware, but which we do not believe affects the validity or enforceability of a claim in our patents and patent applications, which may, nonetheless, ultimately be found to affect the validity or enforceability of a claim. Furthermore, even if our patents are unchallenged, they may not adequately protect our intellectual property, provide exclusivity for our product candidates, prevent others from designing around our claims or provide us with a competitive advantage. The legal systems of certain countries do not favor the aggressive enforcement of patents, and the laws of foreign countries may not allow us to protect our inventions with patents to the same extent as the laws of the United States. Because patent applications in the United States and many foreign jurisdictions are typically not published until 18 months after filing, or in some cases not at all, and because publications of discoveries in scientific literature lag behind actual discoveries, we cannot be certain that we were the first to make the inventions claimed in our issued patents or pending patent applications, or that we were the first to file for protection of the inventions set forth in our patents or patent applications. As a result, we may not be able to obtain or maintain protection for certain inventions. Therefore, the issuance, validity, enforceability, scope and commercial value of our patents in the United States and in foreign countries cannot be predicted with certainty

and, as a result, any patents that we own or license may not provide sufficient protection against competitors. We may not be able to obtain or maintain patent protection from our pending patent applications, from those we may file in the future, or from those we may license from third parties. Moreover, even if we are able to obtain patent protection, such patent protection may be of insufficient scope to achieve our business objectives. In addition, the issuance of a patent does not give us the right to practice the patented invention. Third parties may have blocking patents that could prevent us from marketing our own patented product candidate and practicing our own patented technology.

Our patents covering one or more of our products or product candidates could be found invalid or unenforceable if challenged.

Any of our intellectual property rights could be challenged or invalidated despite measures we take to obtain patent and other intellectual property protection with respect to our product candidates and proprietary technology. For example, if we were to initiate legal proceedings against a third party to enforce a patent covering one of our product candidates, the defendant could counterclaim that our patent is invalid and/or unenforceable. In patent litigation in the United States and in some other jurisdictions, defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, for example, lack of novelty, obviousness or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld material information from the United States Patent and Trademark Office ("USPTO"), or the applicable foreign counterpart, or made a misleading statement, during prosecution. A litigant or the USPTO itself could challenge our patents on this basis even if we believe that we have conducted our patent prosecution in accordance with the duty of candor and in good faith. The outcome following such a challenge is unpredictable.

With respect to challenges to the validity of our patents, for example, there might be invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on a product candidate. Even if a defendant does not prevail on a legal assertion of invalidity and/or unenforceability, our patent claims may be construed in a manner that would limit our ability to enforce such claims against the defendant and others. The cost of defending such a challenge, particularly in a foreign jurisdiction, and any resulting loss of patent protection could have a material adverse impact on one or more of our product candidates and our business.

Enforcing our intellectual property rights against third parties may also cause such third parties to file other counterclaims against us, which could be costly to defend, particularly in a foreign jurisdiction, and could require us to pay substantial damages, cease the sale of certain products or enter into a license agreement and pay royalties (which may not be possible on commercially reasonable terms or at all). Any efforts to enforce our intellectual property rights are also likely to be costly and may divert the efforts of our scientific and management personnel.

Our intellectual property rights will not necessarily provide us with competitive advantages.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations, and may not adequately protect our business, or permit us to maintain our competitive advantage. The following examples are illustrative:

- others may be able to make compounds that are similar to our product candidates but that are not covered by the claims of the patents that we or our strategic partners own or have exclusively licensed;
- others may independently develop similar or alternative technologies without infringing our intellectual property rights;
- issued patents that we own or have exclusively licensed may not provide us with any competitive advantages, or may be held invalid or unenforceable, as a result of legal challenges by our competitors;
- we may obtain patents for certain compounds many years before we obtain marketing approval for product candidates containing such compounds, and because patents have a limited life, which may begin to run prior to the commercial sale of the related product, the commercial value of our patents may be limited;
- our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;

- we may fail to develop additional proprietary technologies that are patentable;
- the laws of certain foreign countries may not protect our intellectual property rights to the same extent as the laws of the United States, or vice versa, or we may fail to apply for or obtain adequate intellectual property protection in all the jurisdictions in which we operate; and
- the patents of others may have an adverse effect on our business, for example by preventing us from marketing one or more of our product candidates for one or more indications.

Any of the aforementioned threats to our competitive advantage could have a material adverse effect on our business.

We may become involved in lawsuits to protect or enforce our patents and trade secrets, which could be expensive, time consuming and unsuccessful.

Third parties may seek to market small molecule versions of any approved products. Alternatively, third parties may seek approval to market their own products similar to or otherwise competitive with our product candidates. In these circumstances, we may need to defend or assert our patents, including by filing lawsuits alleging patent infringement. The outcome following legal assertions of invalidity and unenforceability is unpredictable. In any of these types of proceedings, a court or agency with jurisdiction may find our patents invalid or unenforceable. Even if we have valid and enforceable patents, these patents still may not provide protection against competing products or processes sufficient to achieve our business objectives.

Even after they have issued, our patents and any patents that we license may be challenged, narrowed, invalidated or circumvented. If our patents are invalidated or otherwise limited or will expire prior to the commercialization of our product candidates, other companies may be better able to develop products that compete with ours, which could adversely affect our competitive business position, business prospects and financial condition. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future product candidates.

The following are examples of litigation and other adversarial proceedings or disputes that we could become a party to involving our patents or patents licensed to us:

- we or our strategic partners may initiate litigation or other proceedings against third parties to enforce our patent and trade secret rights;
- third parties may initiate litigation or other proceedings seeking to invalidate patents owned by or licensed to us or to obtain a declaratory judgment that their product or technology does not infringe our patents or patents licensed to us;
- third parties may initiate opposition or reexamination proceedings challenging the validity or scope of our patent rights, requiring us or our strategic partners and/or licensors to participate in such proceedings to defend the validity and scope of our patents;
- there may be a challenge or dispute regarding inventorship or ownership of patents or trade secrets currently identified as being owned by or licensed to us;
- the USPTO may initiate an interference between patents or patent applications owned by or licensed to us and those of our competitors, requiring us or our strategic partners and/or licensors to participate in an interference proceeding to determine the priority of invention, which could jeopardize our patent rights; or
- third parties may seek approval to market small molecule drug versions of our future approved products prior to expiration of relevant patents owned by or licensed to us, requiring us to defend our patents, including by filing lawsuits alleging patent infringement.

These lawsuits and proceedings would be costly and could affect our results of operations and divert the attention of our managerial and scientific personnel. Adversaries in these proceedings may have the ability to dedicate substantially greater resources to prosecuting these legal actions than we or our licensors can. There is a risk that a court or administrative body would decide that our patents are invalid or not infringed or trade secrets not misappropriated by a third party's activities, or that the scope of certain issued claims must be further limited. An adverse outcome in a

litigation or proceeding involving our own patents or trade secrets could limit our ability to assert our patents or trade secrets against these or other competitors, affect our ability to receive royalties or other licensing consideration from our licensees, and may curtail or preclude our ability to exclude third parties from making, using and selling similar or competitive products. Any of these occurrences could adversely affect our competitive business position, business prospects and financial condition.

We may not be able to prevent, alone or with our licensors, infringement or misappropriation of our intellectual property rights, particularly in countries where the laws may not protect those rights as fully as in the United States. Any litigation or other proceedings to enforce our intellectual property rights may fail, and even if successful, may result in substantial costs and distract our management and other employees.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have an adverse effect on the price of our common shares.

The degree of future protection for our proprietary rights is uncertain because legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage. For example:

- others may be able to develop a platform that is similar to, or better than, ours in a way that is not covered by the claims of our patents;
- others may be able to make compounds that are similar to our product candidates but that are not covered by the claims of our patents;
- we might not have been the first to make the inventions covered by patents or pending patent applications;
- we might not have been the first to file patent applications for these inventions;
- any patents that we obtain may not provide us with any competitive advantages or may ultimately be found invalid or unenforceable; or
- we may not develop additional proprietary technologies that are patentable or that afford meaningful trade secret protection.

Patent terms may be inadequate to protect our competitive position on our product candidates for an adequate amount of time.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. Various extensions may be available, but the life of a patent, and the protection it affords, is limited. Even if patents covering our product candidates are obtained, once the patent life has expired, we may be open to competition from competitive products, including biosimilars. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

If we do not obtain protection under the Hatch-Waxman amendments and similar foreign legislation for extending the term of patents covering each of our product candidates, our business may be materially harmed.

Depending upon the timing, duration and conditions of FDA marketing approval of our product candidates, one or more of our U.S. patents may be eligible for limited patent term extension under the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent term extension of up to five years for a patent covering an approved product as compensation for effective patent term lost during product development and the FDA regulatory review process. However, we may not receive an extension if we fail to apply within applicable deadlines, fail to apply prior to expiration of relevant patents or otherwise fail to satisfy applicable requirements. Moreover, the length of the extension could be less

than we request. If we are unable to obtain patent term extension or the term of any such extension is less than we request, the period during which we can enforce our patent rights for that product will be shortened compared to expectations and our competitors may obtain approval to market competing products sooner. As a result, our revenue from applicable products could be reduced, possibly materially. Further, if this occurs, our competitors may take advantage of our investment in development and trials by referencing our clinical and preclinical data and launch their product earlier than might otherwise be the case.

If we are unable to protect the confidentiality of our proprietary information, the value of our technology and product candidates could be adversely affected.

In addition to patent protection, we also rely on other proprietary rights, including protection of trade secrets, and other proprietary information. For example, we treat our proprietary computational technologies, including unpatented know-how and other proprietary information, as trade secrets. To maintain the confidentiality of trade secrets and proprietary information, we enter into confidentiality agreements with our employees, consultants, strategic partners and others upon the commencement of their relationships with us. These agreements require that all confidential information developed by the individual or made known to the individual by us during the course of the individual's relationship with us be kept confidential and not disclosed to third parties. Our agreements with employees and our personnel policies also provide that any inventions conceived by the individual in the course of rendering services to us shall be our exclusive property. However, we may not obtain these agreements in all circumstances, and individuals with whom we have these agreements may not comply with their terms. Thus, despite such agreement, such inventions may become assigned to third parties. In the event of unauthorized use or disclosure of our trade secrets or proprietary information, these agreements, even if obtained, may not provide meaningful protection, particularly for our trade secrets or other confidential information. To the extent that our employees, consultants or contractors use technology or know-how owned by third parties in their work for us, disputes may arise between us and those third parties as to the rights in related inventions. To the extent that an individual who is not obligated to assign rights in intellectual property to us is rightfully an inventor of intellectual property, we may need to obtain an assignment or a license to that intellectual property from that individual, or a third party or from that individual's assignee. Such assignment or license may not be available on commercially reasonable terms or at all.

Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming and the outcome is unpredictable. The disclosure of our trade secrets would impair our competitive position and may materially harm our business, financial condition and results of operations. Costly and time consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to maintain trade secret protection could adversely affect our competitive business position. In addition, if any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent such third party, or those to whom they communicate such technology or information, from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor, or if we otherwise lose protection for our trade secrets or proprietary know-how, the value of this information may be greatly reduced and our business and competitive position could be harmed. Adequate remedies may not exist in the event of unauthorized use or disclosure of our proprietary information.

As is common in the biotechnology and pharmaceutical industries, we employ individuals who were previously or concurrently employed at research institutions and/or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. We may be subject to claims that these employees, or we, have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers, or that patents and applications we have filed to protect inventions of these employees, even those related to one or more of our product candidates, are rightfully owned by their former or concurrent employer.

Litigation may be necessary to defend against these claims. Such trade secrets or other proprietary information could be awarded to a third party, and we could be required to obtain a license from such third party to commercialize our technology or product candidates. Such license may not be available on commercially reasonable terms or at all. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

Obtaining and maintaining our patent protection depends on compliance with various procedural, documentary, fee payment and other requirements imposed by regulations and governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents or applications will be due to the USPTO and various foreign patent offices at various points over the lifetime of our patents or applications. We have systems in place to remind us to pay these fees, and we rely on our outside patent annuity service to pay these fees when due. Additionally, the USPTO and various foreign patent offices require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. We employ reputable law firms and other professionals to help us comply, and in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with rules applicable to the particular jurisdiction. However, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. If such an event were to occur, it could have a material adverse effect on our business.

We may be subject to claims challenging the inventorship of our patents and other intellectual property.

Although we are not currently experiencing any claims challenging the inventorship or ownership of our patents, we may in the future be subject to claims that former employees, strategic partners or other third parties have an interest in our patents or other intellectual property as an inventor or co-inventor. While it is our policy to require our employees and contractors who may be involved in the conception or development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who, in fact, conceives or develops intellectual property that we regard as our own. For example, the assignment of intellectual property rights may not be self-executing or the assignment agreements may be breached, or we may have inventorship disputes arise from conflicting obligations of consultants or others who are involved in developing our product candidates. Litigation may be necessary to defend against these and other claims challenging inventorship. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

Patent protection and patent prosecution for some of our product candidates may be dependent on, and the ability to assert patents and defend them against claims of invalidity may be maintained by, third parties.

There may be times in the future when certain patents that relate to our product candidates or any approved products are controlled by our licensees or licensors. Although we may, under such arrangements, have rights to consult with our strategic partners on actions taken as well as back-up rights of prosecution and enforcement, we have in the past and may in the future relinquish rights to prosecute and maintain patents and patent applications within our portfolio as well as the ability to assert such patents against infringers.

If any current or future licensee or licensor with rights to prosecute, assert or defend patents related to our product candidates fails to appropriately prosecute and maintain patent protection for patents covering any of our product candidates, or if patents covering any of our product candidates are asserted against infringers or defended against claims of invalidity or unenforceability in a manner which adversely affects such coverage, our ability to develop and commercialize any such product candidate may be adversely affected and we may not be able to prevent competitors from making, using and selling competing products.

Changes in patent laws or patent jurisprudence could diminish the value of patents in general, thereby impairing our ability to protect our product candidates.

The patent positions of pharmaceutical and biotechnology companies can be highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. Changes in either the patent laws or in the interpretations of patent laws in the United States and other countries may diminish the value of our intellectual property. We cannot predict the breadth of claims that may be allowed or found to be enforceable in our patents, in our strategic partners' patents or in third-party patents. The United States has enacted and is currently implementing wide-ranging patent reform legislation. Further, recent U.S. Supreme Court rulings have either narrowed the scope of patent protection available in certain circumstances or weakened the rights of patent owners in

certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the validity, scope and value of patents, once obtained.

For our U.S. patent applications containing a priority claim after March 16, 2013, there is a greater level of uncertainty in the patent law. In September 2011, the Leahy-Smith America Invents Act, also known as the America Invents Act, or AIA, was signed into law. The AIA includes a number of significant changes to U.S. patent law, including provisions that affect the way patent applications will be prosecuted and may also affect patent litigation.

The AIA and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have an adverse effect on our business. An important change introduced by the AIA is that, as of March 16, 2013, the United States transitioned to a "first-to-file" system for deciding which party should be granted a patent when two or more patent applications are filed by different parties disclosing or claiming the same invention. A third party that has filed, or does file a patent application in the USPTO after March 16, 2013 but before us, could be awarded a patent covering a given invention, even if we had made the invention before it was made by the third party. This requires us to be cognizant going forward of the time from invention to filing of a patent application.

Among some of the other changes introduced by the AIA are changes that limit where a patentee may file a patent infringement suit and providing opportunities for third parties to challenge any issued patent in the USPTO. This applies to all of our U.S. patents, even those issued before March 16, 2013. Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in United States federal court necessary to invalidate a patent claim, a third party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a claim invalid even though the same evidence would be insufficient to invalidate the claim if first presented in a district court action. Accordingly, a third party may attempt to use the USPTO procedures to invalidate our patent claims that would not have been invalidated if first challenged by the third party as a defendant in a district court action.

Depending on decisions by the U.S. Congress, the U.S. federal courts, the USPTO or similar authorities in foreign jurisdictions, the laws and regulations governing patents could change in unpredictable ways that may weaken our and our licensors' ability to obtain new patents or to enforce existing patents we and our licensors or partners may obtain in the future.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions.

Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our current product candidates or future products, if any, and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing. Recent United States Supreme Court cases have narrowed the scope of what is considered patentable subject matter, for example, in the areas of software and diagnostic methods involving the association between disease state treatment outcome and biomarkers. This could impact our ability to patent certain aspects of our technology in the United States.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property protection, particularly those relating to biotechnology products, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights generally. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate

and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Additionally, the requirements for patentability may differ in certain countries, particularly developing countries. In those countries, we and our licensors may have limited remedies if patents are infringed or if we or our licensors are compelled to grant a license to a third party, which could materially diminish the value of those patents. This could limit our potential revenue opportunities. Accordingly, our efforts to enforce intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we own or license.

We will need to obtain FDA approval for any proposed product candidate names, and any failure or delay associated with such approval may adversely affect our business.

Any proprietary name or trademark we intend to use for our product candidates will require approval from the FDA regardless of whether we have secured a formal trademark registration from the USPTO. The FDA typically conducts a review of proposed product candidate names, including an evaluation of the potential for confusion with other product names. If the FDA objects to any product candidate names we propose, we may be required to adopt an alternative name for the product candidate. If we adopt an alternative name, we would lose the benefit of any existing trademark applications for such product candidate and may be required to expend significant additional resources in an effort to identify a suitable product name that would qualify under applicable trademark laws, not infringe the existing rights of third parties and be acceptable to the FDA. We may be unable to build a successful brand identity for a new trademark in a timely manner or at all, which would limit our ability to commercialize our product candidates.

If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our marks of interest and our business may be adversely affected.

Our trademarks or trade names may be challenged, infringed, circumvented or declared generic, descriptive, non-distinctive, or otherwise invalid or determined to be infringing on other marks. We rely on common law (unregistered) protection for our trademarks. We may not be able to protect our rights to these trademarks and trade names or may be forced to stop using these names, which we need for name recognition by potential partners or customers in our markets of interest. During the trademark registration process, we may receive office actions from the USPTO or comparable agencies in foreign jurisdictions objecting to the registration of our trademarks. Although we would be given an opportunity to respond to those objections, we may be unable to overcome such rejections. In addition, in the USPTO and in comparable agencies in many foreign jurisdictions, third parties are given an opportunity to oppose pending trademark applications and/or to seek the cancellation of registered trademarks.

Opposition or cancellation proceedings or lawsuits may be filed against our trademarks, and our trademarks may not survive such proceedings. If we are unable to establish name recognition based on our trademarks and trade names, we may not be able to compete effectively and our business may be adversely affected.

Our proprietary position depends upon patents that are manufacturing, formulation or method-of-use patents, which may not prevent a competitor or other third party from using the same product candidate for another use.

Composition-of-matter patents on the active pharmaceutical ingredient, or API, in prescription drug products are generally considered to be the strongest form of intellectual property protection for drug products because such patents provide protection without regard to any particular method of use or manufacture or formulation of the API used. We currently have granted U.S. patents with claims to the use of uric acid lowering agents to treat insulin resistance or diabetic nephropathy, and patent applications filed in the U.S., EU and under the Patent Cooperation Treaty with similar claims for the treatment of metabolic syndrome, diabetes, fatty liver disease as well as a composition of matter patent for formulations of xanthine oxidase inhibitors.

We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties.

We have received confidential and proprietary information from third parties. In addition, we employ individuals and engage consultants who were previously or are currently employed at other biotechnology or pharmaceutical companies. We may be subject to claims that we or our employees, consultants or independent contractors have

inadvertently or otherwise used or disclosed confidential information of these third parties or our employees' former employers or our consultants' or contractors' current or former clients or customers. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial cost and be a distraction to our management and employees. If we are not successful, we could lose access or exclusive access to valuable intellectual property.

We may be subject to damages resulting from claims that we, our employees or our consultants have wrongfully used or disclosed alleged trade secrets of our competitors or are in breach of non-competition or non-solicitation agreements with our competitors.

Many of our consultants were previously or are currently employed at other, third party, biotechnology and pharmaceutical companies, and this many include our competitors or potential competitors. We may be subject to claims that we, our employees or our consultants have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of these third parties. In addition, we may in the future be subject to claims that we caused an employee of a third party to breach the terms of his or her non-competition or non-solicitation agreement. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and could be a distraction to management. If our defense to those claims fails, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Any litigation or the threat thereof may adversely affect our ability to hire employees. A loss of key personnel or their work product could hamper or prevent our ability to commercialize product candidates, which could have an adverse effect on our business, financial condition and results of operations.

We depend on intellectual property licensed from third parties and termination of any of these licenses could result in the loss of significant rights, which would harm our business.

We are dependent on patents, know-how and proprietary technology, both our own and licensed from others. We license technology from the University of Florida, and Dr. Richard Johnson.

These agreements impose numerous obligations, such as diligence and payment obligations. Any termination of these licenses could result in the loss of significant rights and could harm our ability to commercialize our product candidates. These licenses do and future licenses may include provisions that impose obligations and restrictions on us. This could delay or otherwise negatively impact a transaction that we may wish to enter into.

Disputes may also arise between us and our licensors regarding intellectual property subject to a license agreement, including disputes concerning:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- whether and the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- our right to sublicense patent and other rights to third parties under collaborative development relationships;
- our diligence obligations with respect to the use of the licensed technology in relation to our development and commercialization of our product candidates, and what activities satisfy those diligence obligations; and
- the ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners.
- If disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates.

We are generally also subject to all of the same risks with respect to protection of intellectual property that we license, as we are for intellectual property that we own, which are described below. If we or our licensors fail to adequately protect this intellectual property, our ability to commercialize product candidates could suffer.

If we fail to comply with our obligations under our patent licenses with third parties, we could lose license rights that are important to our business.

We are a party to license agreements with University of Florida, and others, pursuant to which we in-license key patent and patent applications for use in one or more of our product candidates. These existing licenses impose

various diligence, milestone payment, royalty, insurance and other obligations on us. If we fail to comply with these obligations, the licensors may have the right to terminate the licenses, in which event we would not be able to develop or market the product candidates covered by such licensed intellectual property.

We rely on certain of our licensors to file and prosecute patent applications and maintain patents and otherwise protect the intellectual property we license from them and may continue to do so in the future. We have limited control over these activities or any other intellectual property that may be related to our in-licensed intellectual property. For example, we cannot be certain that such activities by these licensors have been or will be conducted in compliance with applicable laws and regulations or will result in valid and enforceable patents and other intellectual property rights. We have limited control over the manner in which our licensors initiate infringement proceeding against a third-party infringer of the intellectual property rights, or defend certain of the intellectual property that is licensed to us. It is possible that any licensors' infringement proceeding or defense activities may be less vigorous than had we conducted them ourselves.

Numerous factors may limit any potential competitive advantage provided by our intellectual property rights.

The degree of future protection afforded by our intellectual property rights, whether owned or in-licensed, is uncertain because intellectual property rights have limitations, and may not adequately protect our business, provide a barrier to entry against our competitors or potential competitors, or permit us to maintain our competitive advantage. Moreover, if a third party has intellectual property rights that cover the practice of our technology, we may not be able to fully exercise or extract value from our intellectual property rights. The following examples are illustrative:

- pending patent applications that we own or license may not lead to issued patents;
- patents, should they issue, that we own or license, may not provide us with any competitive advantages, or may be challenged and held invalid or unenforceable;
- others may be able to develop and/or practice technology that is similar to our technology or aspects of our technology but that is not covered by the claims of any of our owned or in-licensed patents, should any such patents issue;
- third parties may compete with us in jurisdictions where we do not pursue and obtain patent protection;
- we (or our licensors) might not have been the first to make the inventions covered by a pending patent application that we own or license;
- we (or our licensors) might not have been the first to file patent applications covering a particular invention;
- others may independently develop similar or alternative technologies without infringing our intellectual property rights;
- we may not be able to obtain and/or maintain necessary licenses on reasonable terms or at all;
- third parties may assert an ownership interest in our intellectual property and, if successful, such disputes may preclude us from exercising exclusive rights, or any rights at all, over that intellectual property;
- we may not be able to maintain the confidentiality of our trade secrets or other proprietary information;
- we may not develop or in-license additional proprietary technologies that are patentable; and
- the patents of others may have an adverse effect on our business.

Should any of these events occur, they could materially harm our business and the results of our operation.

Risks Related to Additional Legal and Compliance Matters

Our employees and independent contractors may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements and insider trading.

We are exposed to the risk of fraud or other misconduct by our employees or independent contractors. Misconduct by these parties could include intentional failures to comply with FDA regulations, to provide accurate information to the FDA, to comply with manufacturing standards we may establish for our product candidates, to comply with federal and state data privacy, security, fraud and abuse laws and other healthcare regulations, to report financial information or data accurately or to disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Activities subject to these laws could also involve the improper use or misrepresentation of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. We have adopted a Code of Business Conduct and Ethics ("Code of Conduct"), but it is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. Additionally, we are subject to the risk that a person or government could allege such fraud or other misconduct, even if none occurred. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a material and adverse effect on our business, financial condition, results of operations and prospects, including the imposition of significant civil, criminal and administrative penalties, monetary damages, fines, disgorgement, imprisonment, loss of eligibility to obtain marketing approvals from the FDA, exclusion from participation in government contracting, healthcare reimbursement or other government programs, including Medicare and Medicaid, reputational harm, diminished profits and future earnings, additional reporting requirements if subject to a corporate integrity agreement or other agreement to resolve allegations of non-compliance with any of these laws, and the curtailment or restructuring of our operations.

If we market products in a manner that violates healthcare fraud and abuse laws, we may be subject to civil or criminal penalties.

In addition to FDA restrictions on the marketing of pharmaceutical products, federal and state healthcare laws restrict certain business practices in the pharmaceutical industry. Although we currently do not have any products on the market, we may be subject, and once our product candidates are approved and we begin commercialization will be subject, to additional healthcare laws and regulations enforced by the federal government and by authorities in the states and foreign jurisdictions in which we conduct our business. These state and federal healthcare laws, commonly referred to as "fraud and abuse" laws, have been applied in recent years to restrict certain marketing practices in the pharmaceutical industry, and include, but are not limited to, anti- kickback, false claims, data privacy and security and transparency statutes and regulations.

For example, federal false claims laws prohibit any person from knowingly presenting, or causing to be presented, a false claim for payment to the federal government or knowingly making, or causing to be made, a false statement to get a false claim paid. The federal Anti-Kickback Statute prohibits, among other things, knowingly and willfully offering, paying, soliciting or receiving remuneration to induce, or in return for, purchasing, leasing, ordering or arranging for the purchase, lease or order of any healthcare item or service reimbursable under Medicare, Medicaid or other federally financed healthcare programs. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand and prescribers, purchasers and formulary managers on the other.

Although there are several statutory exemptions and regulatory safe harbors protecting certain common activities from prosecution, the exemptions and safe harbors are drawn narrowly, and practices that involve remuneration intended to induce prescribing, purchasing or recommending may be subject to scrutiny if they do not qualify for an exemption or safe harbor. Most states also have statutes or regulations similar to the federal anti-kickback law and federal false claims laws, which may apply to items such as pharmaceutical products and services reimbursed by private insurers. Administrative, civil and criminal sanctions may be imposed under these federal and state laws.

Over the past few years, a number of pharmaceutical and other healthcare companies have been prosecuted under these laws for a variety of promotional and marketing activities, such as:

- providing free trips, free goods, sham consulting fees and grants and other monetary benefits to prescribers;
- reporting to pricing services inflated average wholesale prices that were then used by federal programs to set reimbursement rates;
- engaging in off-label promotion; and
- submitting inflated best price information to the Medicaid Rebate Program to reduce liability for Medicaid rebates.

If our operations are found to be in violation of any of the healthcare laws or regulations that may apply to us, we may be subject to penalties, including potentially significant criminal, civil or administrative penalties, damages, fines, disgorgement, individual imprisonment, exclusion of products from reimbursement under government programs, contractual damages, reputational harm, administrative burdens, diminished profits and future earnings or the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations. To the extent that any of our products will be sold in a foreign country, we may be subject to similar foreign laws and regulations, which may include, for instance, applicable post- marketing requirements, including safety surveillance, fraud and abuse laws, and implementation of corporate compliance programs and reporting of payments or transfers of value to healthcare professionals.

If we do not comply with laws regulating the protection of the environment and health and human safety, our business could be adversely affected.

Our research and development involves, and may in the future involve, the use of potentially hazardous materials and chemicals. Our operations may produce hazardous waste products. Although we believe that our safety procedures for handling and disposing of these materials comply with the standards mandated by local, state and federal laws and regulations, the risk of accidental contamination or injury from these materials cannot be eliminated. If an accident occurs, we could be held liable for resulting damages, which could be substantial. We are also subject to numerous environmental, health and workplace safety laws and regulations and fire and building codes, including those governing laboratory procedures, exposure to blood-borne pathogens, use and storage of flammable agents and the handling of biohazardous materials. We do not maintain workers' compensation insurance. We do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us. Additional federal, state and local laws and regulations affecting our operations may be adopted in the future. We may incur substantial costs to comply with, and substantial fines or penalties if we violate, any of these laws or regulations.

Risks Related to Employee Matters and Managing Growth

Our future success depends on our ability to retain key executives and to attract, retain and motivate qualified personnel.

We are highly dependent on the research and development, clinical and business expertise of Dr. Allen Warren Davidoff, our President and Chief Executive Officer, Mr. Amar Keshri, our Chief Financial Officer, as well as other members of our senior management, scientific and clinical team. Although we have entered into employment agreements with our executive officers, each of them may terminate their employment with us at any time. We currently do not maintain "key person" insurance coverage for Dr. Davidoff and Mr. Fairbairn. The loss of the services of our executive officers or other key employees could impede the achievement of our research, development and commercialization objectives and seriously harm our ability to successfully implement our business strategy.

Recruiting and retaining qualified scientific, clinical, manufacturing and sales and marketing personnel will also be critical to our success. In addition, we will need to expand and effectively manage our managerial, operational, financial, development and other resources in order to successfully pursue our research, development and commercialization efforts for our existing and future product candidates. Furthermore, replacing executive officers and key employees may be difficult and may take an extended period of time because of the limited talent pool in our industry due to the breadth of skills and experience required to successfully develop, gain regulatory approval of and commercialize products. Intense competition for attracting key skill-sets may limit our ability to retain and motivate

these key personnel on acceptable terms. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability. If we are unable to continue to attract and retain high quality personnel, our ability to pursue our growth strategy will be limited.

We will need to grow our organization, and we may experience difficulty in managing this growth, which could disrupt our operations.

As of August 31, 2021, we had one full-time employee and 12 consultants. As our development and commercialization plans and strategies develop, and as we transition into operating as a public company, we expect to expand our employee base for managerial, operational, financial and other resources. Additionally, as our product candidates enter and advance through preclinical studies and any clinical trials, we will need to expand our development, manufacturing, regulatory sales and marketing capabilities or contract with other organizations to provide these capabilities for us. Future growth would impose significant added responsibilities on members of management, including the need to identify, recruit, maintain, motivate and integrate additional employees. Also, our management may need to divert a disproportionate amount of their attention away from our day-to-day activities and devote a substantial amount of time to managing these growth activities. We may not be able to effectively manage the expansion of our operations, which may result in weaknesses in our infrastructure, give rise to operational errors, loss of business opportunities, loss of employees and reduced productivity amongst remaining employees. Our expected growth could require significant capital expenditures and may divert financial resources from other projects, such as the development of existing and additional product candidates. If our management is unable to effectively manage our expected growth, our expenses may increase more than expected, our ability to generate or grow revenue could be reduced and we may not be able to implement our business strategy. Our future financial performance and our ability to commercialize our product candidates and compete effectively with others in our industry will depend on our ability to effectively manage any future growth.

Business disruptions could seriously harm our future revenue and financial condition and increase our costs and expenses.

Our operations, and those of our CROs, CMOs and other contractors and consultants, could be subject to earthquakes, power shortages, telecommunications failures, water shortages, floods, hurricanes, typhoons, fires, extreme weather conditions, medical epidemics and other natural or man-made disasters or business interruptions, for which we are predominantly self-insured. The occurrence of any of these business disruptions could seriously harm our operations and financial condition and increase our costs and expenses. We rely on third-party manufacturers to produce and process our product candidates on a patient-by-patient basis. Our ability to obtain clinical supplies of our product candidates could be disrupted if the operations of these suppliers are affected by a man-made or natural disaster or other business interruption.

Risks Related to Our Securities and this Offering

Our share price is likely to be volatile and the market price of our common shares after this offering may drop below the price you pay.

You should consider an investment in our securities as risky and invest only if you can withstand a significant loss and wide fluctuations in the market value of your investment. You may be unable to sell your securities at or above the initial public offering price due to fluctuations in the market price of our common shares arising from changes in our operating performance or prospects. In addition, the stock market has recently experienced significant volatility, particularly with respect to pharmaceutical, biotechnology and other life sciences company stocks. The volatility of pharmaceutical, biotechnology and other life sciences company stocks often does not relate to the operating performance of the companies represented by the stock. Some of the factors that may cause the market price of our common shares to fluctuate or decrease below the price paid in this offering include:

- results and timing of our clinical trials and clinical trials of our competitors' products;
- failure or discontinuation of any of our development programs;

- issues in manufacturing our product candidates or future approved products;
- regulatory developments or enforcement in the United States and foreign countries with respect to our product candidates or our competitors' products;
- competition from existing products or new products that may emerge;
- developments or disputes concerning patents or other proprietary rights;
- introduction of technological innovations or new commercial products by us or our competitors;
- announcements by us, our strategic partners or our competitors of significant acquisitions, strategic partnerships, joint ventures, or capital commitments;
- changes in estimates or recommendations by securities analysts, if any cover our common shares;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- public concern over our product candidates or any future approved products;
- litigation;
- future sales of our common shares;
- share price and volume fluctuations attributable to inconsistent trading volume levels of our shares;
- additions or departures of key personnel;
- changes in the structure of healthcare payment systems in the United States or overseas;
- failure of any of our product candidates, if approved, to achieve commercial success;
- economic and other external factors or other disasters or crises;
- period-to-period fluctuations in our financial condition and results of operations, including the timing of receipt of any milestone or other payments under commercialization or licensing agreements;
- general market conditions and market conditions for pharmaceutical stocks;
- overall fluctuations in U.S. equity markets; and
- other factors that may be unanticipated or out of our control.

In addition, in the past, when the market price of a stock has been volatile, holders of that stock have instituted securities class action litigation against the company that issued the stock. If any of our shareholders brought a lawsuit against us, we could incur substantial costs defending the lawsuit and divert the time and attention of our management, which could seriously harm our business.

Substantial future sales of our common shares, or the perception that these sales could occur, may cause the price of our common shares to drop significantly, even if our business is performing well.

A large volume of sales of our common shares could decrease the prevailing market price of our common shares and could impair our ability to raise additional capital through the sale of equity securities in the future. Even if a substantial number of sales of our common shares does not occur, the mere perception of the possibility of these sales could depress the market price of our common shares and have a negative effect on our ability to raise capital in the future.

We will incur significant increased costs as a result of operating as a public company in the United States, and our management will be required to devote substantial time to corporate governance standards.

We are already a public company in Canada. However, as a public company in the United States, we will incur additional significant legal, accounting and other expenses that we did not incur as a public company in Canada. In addition, our administrative staff will be required to perform additional tasks. For example, in anticipation of becoming

a public company in the United States, we will need to adopt additional internal controls, disclosure controls and procedures and policies specific to complying with the requirements of a public company in the United States. We will bear all of the internal and external costs of preparing and distributing periodic public reports in compliance with our obligations under the applicable securities laws.

In addition, while we are currently listed on the CSE, regulations and standards relating to corporate governance and public disclosure, including the Sarbanes-Oxley Act and the related rules and regulations implemented by the SEC, the applicable Canadian securities regulators, Nasdaq or NYSE, will increase legal and financial compliance costs and will make some compliance activities more time consuming. We are currently evaluating these rules, and cannot predict or estimate the amount of additional costs we may incur or the timing of such costs. We intend to invest resources to comply with evolving laws, regulations and standards, and this investment will result in increased general and administrative expenses and may divert management's time and attention from our other business activities. If our efforts to comply with new laws, regulations and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to practice, regulatory authorities may initiate legal proceedings against us and our business may be harmed. In connection with this offering, we will increase our directors' and officers' insurance coverage which will increase our insurance cost. In the future, it may be more expensive or more difficult for us to obtain director and officer liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to obtain coverage. These factors could also make it more difficult for us to attract and retain qualified members of our board of directors, particularly to serve on our audit committee and compensation committee, and qualified executive officers.

Under the corporate governance standards of Nasdaq and the NYSE, a majority of our board of directors and each member of our audit committee must be an independent director no later than the first anniversary of the completion of this offering. Subject to certain limited exceptions, Canadian securities laws require each member of the audit committee to be independent and financially literate within the meaning of Canadian securities laws. We may encounter difficulty in attracting qualified persons to serve on our board of directors and the audit committee, and our board of directors and management may be required to divert significant time and attention and resources away from our business to identify qualified directors. If we fail to attract and retain the required number of independent directors, we may be subject to the delisting of our common shares from Nasdaq or NYSE.

We are a "foreign private issuer" and may have disclosure obligations that are different from those of U.S. domestic reporting companies. As a foreign private issuer, we are subject to different U.S. securities laws and rules than a domestic U.S. issuer, which could limit the information publicly available to our shareholders.

As a "foreign private issuer", we are subject to reporting obligations that, in certain respects, are less detailed and less frequent than those of U.S. domestic reporting companies. We are required to file or furnish to the SEC the continuous disclosure documents that we are required to file in Canada under Canadian securities laws. For example, we are not required to issue quarterly reports, proxy statements that comply with the requirements applicable to U.S. domestic reporting companies, or individual executive compensation information that is as detailed as that required of U.S. domestic reporting companies. We will also have four months after the end of each fiscal year to file our annual reports with the SEC and will not be required to file current reports as frequently or promptly as U.S. domestic reporting companies. Furthermore, our officers, directors and principal shareholders are exempt from the insider reporting and short-swing profit recovery requirements in Section 16 of the Exchange Act. Accordingly, our shareholders may not know on as timely a basis when our officers, directors and principal shareholders purchase or sell their common shares, as the reporting deadlines under the corresponding Canadian insider reporting requirements are longer (we have four days to report). As a foreign private issuer, we are also exempt from the requirements of Regulation FD (Fair Disclosure) which, generally, are meant to ensure that select groups of investors are not privy to specific information about an issuer before other investors. As a result of such varied reporting obligations, shareholders should not expect to receive the same information at the same time as information provided by U.S. domestic companies.

In addition, as a foreign private issuer, we have the option to follow certain Canadian corporate governance practices rather than those of the United States, except to the extent that such laws would be contrary to U.S. securities laws, provided that we disclose the requirements we are not following and describe the Canadian practices we follow instead. As a result, our shareholders may not have the same protections afforded to shareholders of companies that are subject to all domestic U.S. corporate governance requirements.

We may lose our "foreign private issuer" status in the future, which could result in additional costs and expenses to us.

We are a "foreign private issuer," as such term is defined in Rule 405 under the Securities Act and are not subject to the same requirements that are imposed upon U.S. domestic issuers by the Securities and Exchange Commission, or SEC. We may in the future lose foreign private issuer status if a majority of our common shares are held in the United States and we fail to meet the additional requirements necessary to avoid loss of foreign private issuer status, such as if: (i) a majority of our directors or executive officers are U.S. citizens or residents; (ii) a majority of our assets are located in the United States; or (iii) our business is administered principally in the United States. The regulatory and compliance costs to us under U.S. securities laws as a U.S. domestic issuer will be significantly more than the costs incurred as a Canadian foreign private issuer. If we are not a foreign private issuer, we would be required to file periodic and current reports and registration statements on U.S. domestic issuer forms with the SEC, which are generally more detailed and extensive than the forms available to a foreign private issuer. In addition, we may lose the ability to rely upon exemptions from corporate governance requirements that are available to foreign private issuers.

We are an "emerging growth company," and any decision on our part to comply only with certain reduced reporting and disclosure requirements applicable to emerging growth companies could make our common shares less attractive to investors.

We are an "emerging growth company," as defined in the JOBS Act. For as long as we continue to be an "emerging growth company," we may choose to take advantage of exemptions from various reporting requirements applicable to other public companies that are not "emerging growth companies," including, but not limited to, not being required to have our independent registered public accounting firm audit our internal control over financial reporting under Section 404 of the Sarbanes-Oxley Act of 2002 ("Section 404"), reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and shareholder approval of any golden parachute payments not previously approved. We could be an "emerging growth company" for up to five years following the completion of this offering, although, if we have more than US$1.07 billion in annual revenue, if the market value of our common shares held by non-affiliates exceeds US$700 million as of June 30 of any year, or we issue more than US$1.0 billion of non-convertible debt over a three-year period before the end of that five-year period, we would cease to be an "emerging growth company" as of the following December 31. Investors could find our common shares less attractive if we choose to rely on these exemptions. If some investors find our common shares less attractive as a result of any choices to reduce future disclosure, there may be a less active trading market for our common shares and our share price may be more volatile. We have elected not to take advantage of the extended transition period allowed for emerging growth companies for complying with new or revised accounting guidance as allowed by Section 107 of the JOBS Act and Section 7(a)(2)(B) of the Securities Act.

If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results or prevent fraud. As a result, shareholders could lose confidence in our financial and other public reporting, which would harm our business and the trading price of our common shares.

Effective internal controls over financial reporting are necessary for us to provide reliable financial reports and, together with adequate disclosure controls and procedures, are designed to prevent fraud. Any failure to implement required new or improved controls, or difficulties encountered in their implementation could cause us to fail to meet our reporting obligations. In addition, any testing by us conducted in connection with Section 404 or any subsequent testing by our independent registered public accounting firm, may reveal deficiencies in our internal controls over financial reporting that are deemed to be material weaknesses or that may require prospective or retroactive changes to our financial statements or identify other areas for further attention or improvement. Inferior internal controls could also cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our common shares.

We will be required to disclose changes made in our internal controls and procedures on a quarterly basis and our management will be required to assess the effectiveness of these controls annually. However, for as long as we are an "emerging growth company" under the JOBS Act, our independent registered public accounting firm will not be required to attest to the effectiveness of our internal controls over financial reporting pursuant to Section 404. We could be an "emerging growth company" for up to five years following this offering. An independent assessment of the

effectiveness of our internal controls could detect problems that our management's assessment might not. Undetected material weaknesses in our internal controls could lead to financial statement restatements and require us to incur the expense of remediation. We have elected not to take advantage of the extended transition period allowed for emerging growth companies for complying with new or revised accounting guidance as allowed by Section 107 of the JOBS Act and Section 7(a)(2)(B) of the Securities Act.

There is no public market for the pre-funded warrants or the Common Share Purchase Warrants being offered by us in this offering.

There is no established public trading market for the pre-funded warrants or the Common Share Purchase Warrants and we do not expect a market to develop. In addition, we do not intend to apply to list the pre-funded warrants or the Common Share Purchase Warrants on any national securities exchange or other nationally recognized trading system, including the QTCQB, CSE, the Nasdaq or NYSE. Without an active market, the liquidity of the pre-funded warrants and the Common Share Purchase Warrants will be limited, which may adversely affect their value.

Holders of pre-funded warrants or Common Share Purchase Warrants purchased in this offering will have no rights as common shareholders until such holders exercise their pre-funded warrants or Common Share Purchase Warrants and acquire our common shares.

Until holders of pre-funded warrants or Common Share Purchase Warrants acquire our common shares upon exercise thereof, such holders will have no rights with respect to our common shares underlying the pre-funded warrants and Common Share Purchase Warrants. Upon exercise of the pre-funded warrants or Common Share Purchase Warrants, the holders will be entitled to exercise the rights of a common shareholder only as to matters for which the record date occurs after the exercise date.

The Common Share Purchase Warrants and pre-funded warrants are speculative in nature.

The Common Share Purchase Warrants and pre-funded warrants do not confer any rights of common share ownership on its holders, such as voting rights or the right to receive dividends, but rather merely represent the right to acquire common shares at a fixed price for a limited period of time. Following this offering, the market value of the Common Share Purchase Warrants and pre-funded warrants, if any, is uncertain and there can be no assurance that the market value of the Common Share Purchase Warrants and pre-funded warrants will equal or exceed their imputed offering price. The Common Share Purchase Warrants and pre-funded warrants will not be listed or quoted for trading on any market or exchange. There can be no assurance that the market price of the common shares will ever equal or exceed the exercise price of the Common Share Purchase Warrants and pre-funded warrants, and consequently, it may not ever be profitable for holders of the Common Share Purchase Warrants and pre-funded warrants to exercise the Common Share Purchase Warrants or the pre-funded warrants.

Our management team will have broad discretion to use the net proceeds from this offering and its investment of these proceeds may not yield a favorable return. They may invest the proceeds of this offering in ways with which investors disagree.

Our management team will have broad discretion in the application of the net proceeds from this offering and could spend or invest the proceeds in ways with which our shareholders disagree. Accordingly, investors will need to rely on our management team's judgment with respect to the use of these proceeds. We intend to use the proceeds from this offering in the manner described under "Use of Proceeds." The failure by management to apply these funds effectively could negatively affect our ability to operate and grow our business.

We cannot specify with certainty all of the particular uses for the net proceeds to be received upon the closing of this offering. In addition, the amount, allocation and timing of our actual expenditures will depend upon numerous factors, including milestone payments received from our strategic partnerships and royalties received on sale of our approved product and any future approved product.

Accordingly, we will have broad discretion in using these proceeds. Until the net proceeds are used, they may be placed in investments that do not produce significant income or that may lose value.

Investors in this offering will pay a much higher price than the book value of our common shares and therefore you will incur immediate and substantial dilution of your investment.

The initial public offering price will be substantially higher than the net tangible book value per common share based on the total value of our tangible assets less our total liabilities immediately following this offering. Therefore, if you purchase securities in this offering, you will experience immediate and substantial dilution of approximately $ per share, representing the difference between our pro forma as adjusted net tangible book value per share after giving effect to this offering at an assumed initial public offering price of US$ per security. As at June 30, 2021, and giving effect to the Proposed Share Consolidation, we have issued 442,930 outstanding stock options and 2,144,005 outstanding warrants to acquire common shares. To the extent these outstanding options and warrants are ultimately exercised, you will experience further dilution. See "Dilution."

An active trading market for our common shares may never develop or be sustained.

We have applied or intend to apply to list our common shares on either Nasdaq or NYSE. However, there has been a limited public trading market on the QTCQB in the United States. We cannot assure you that an active trading market for our common shares will develop on Nasdaq or NYSE or elsewhere or, if developed, that any market will be sustained. Accordingly, we cannot assure you of the likelihood that an active trading market for our common shares will develop or be maintained, the liquidity of any trading market, your ability to sell your shares of our common shares when desired, or the prices that you may obtain for your common shares.

Even if our board of directors approves the Proposed Share Consolidation at a ratio that currently achieves the requisite increase in the market price of our common stock for listing of our common stock on Nasdaq or NYSE, we cannot assure you that the market price of our common shares will remain high enough for the Proposed Share Consolidation to have the intended effect of complying with Nasdaq's or NYSE's minimum price requirement.

In connection with this offering and the uplist of our common shares to Nasdaq or NYSE, we intend to effect a share consolidation at the applicable ratio necessary to allow us to obtain Nasdaq or NYSE approval of our initial listing application to list our common shares on either Nasdaq or NYSE. Even if our board of directors approves the Proposed Share Consolidation at a ratio that currently achieves the requisite increase in the market price of our common shares for listing of our common shares on Nasdaq or NYSE, there can be no assurance that the market price of our common shares following the Proposed Share Consolidation will remain at the level required for continuing compliance with that requirement. It is not uncommon for the market price of a company's common shares to decline in the period following a share consolidation. If the market price of our common shares declines following the effectuation of the Proposed Share Consolidation, the percentage decline may be greater than would occur in the absence of a share consolidation. In any event, other factors unrelated to the number of common shares outstanding, such as negative financial or operational results, could adversely affect the market price of our common shares and thus jeopardize our ability to meet or maintain the Nasdaq's or NYSE's minimum price requirement. If we are unable to satisfy these requirements or standards, we would not be able to meet the initial listing applications, which could cause us to terminate the offering. We can provide no assurance that any such action taken by us would allow our common shares to be listed, stabilize the market price or improve the liquidity of our common stock, prevent our common stock from dropping below the minimum bid price requirement, or prevent future non-compliance with the listing requirements.

We might be unable to list our common shares on Nasdaq or NYSE, or the CSE may delist our securities from its exchange, which could limit investors' ability to make transactions in our securities and subject us to additional trading restrictions.

We have applied or intend to apply to list our common shares on either Nasdaq or NYSE. In order to make a final determination of compliance with its listing criteria, the Nasdaq may look to the first trading day's activity and, particularly, the last bid price on such day. In the event the trading price for our common shares drops below Nasdaq's or NYSE's minimum bid requirements, Nasdaq or NYSE could rescind our initial listing approval. If we fail to list the common shares on Nasdaq or NYSE, the liquidity for our common shares would be significantly impaired, which may substantially decrease the trading price of our common shares.

In addition, in the future, our securities may fail to meet the continued listing requirements to be listed on Nasdaq or NYSE. If Nasdaq or NYSE delists our common shares from trading on its exchange, we could face significant material adverse consequences, including:

- a limited availability of market quotations for our securities;
- a determination that our common shares is a "penny stock" which will require brokers trading in our common shares to adhere to more stringent rules and possibly resulting in a reduced level of trading activity in the secondary trading market for our common shares;
- a limited amount of news and analyst coverage for our company; and
- a decreased ability to issue additional securities or obtain additional financing in the future.

We are governed by the corporate laws of Canada which in some cases have a different effect on shareholders than the corporate laws of the United States.

We are governed by the BCBCA and other relevant laws, which may affect the rights of shareholders differently than those of a company governed by the laws of a U.S. jurisdiction, and may, together with our charter documents, have the effect of delaying, deferring or discouraging another party from acquiring control of our company by means of a tender offer, a proxy contest or otherwise, or may affect the price an acquiring party would be willing to offer in such an instance. The material differences between the BCBCA and Delaware General Corporation Law, or DGCL, that may have the greatest such effect include, but are not limited to, the following: (i) for certain corporate transactions (such as mergers and amalgamations or amendments to our articles) the BCBCA generally requires the voting threshold to be a special resolution approved by 662/3% of shareholders, or as set out in the articles, as applicable, whereas DGCL generally only requires a majority vote; and (ii) under the BCBCA a holder of 5% or more of our common shares can requisition a special meeting of shareholders, whereas such right does not exist under the DGCL. We cannot predict whether investors will find our company and our common shares less attractive because we are governed by foreign laws.

In addition, a non-Canadian must file an application for review with the Minister responsible for the Investment Canada Act and obtain approval of the Minister prior to acquiring control of a "Canadian Business" within the meaning of the Investment Canada Act, where prescribed financial thresholds are exceeded. Finally, limitations on the ability to acquire and hold our common shares may be imposed by the Competition Act (Canada). The Competition Act (Canada) establishes a pre-merger notification regime for certain types of merger transactions that exceed certain statutory shareholding and financial thresholds. Transactions that are subject to notification cannot be closed until the required materials are filed and the applicable statutory waiting period has expired or been waived by the Commissioner. However, the Competition Act (Canada) permits the Commissioner of Competition to review any acquisition or establishment, directly or indirectly, including through the acquisition of shares, of control over or of a significant interest in us, whether or not it is subject to mandatory notification. Otherwise, there are no limitations either under the laws of Canada, or in our articles of incorporation, or "articles," or amended and restated bylaws, or "bylaws," on the rights of non-Canadians to hold or vote our common shares. Any of these provisions may discourage a potential acquirer from proposing or completing a transaction that may have otherwise presented a premium to our shareholders. We cannot predict whether investors will find our Company and our common shares less attractive because we are governed by foreign laws.

U.S. civil liabilities may not be enforceable against us, our directors, our officers or certain experts named in this prospectus.

We are governed by the BCBCA and our principal place of business is in Canada. Many of our directors and officers, as well as certain experts named herein, reside outside of the United States, and all or a substantial portion of their assets as well as all or a substantial portion of our assets are located outside the United States. As a result, it may be difficult for investors to effect service of process within the United States upon us and such directors, officers and experts or to enforce judgments obtained against us or such persons, in U.S. courts, in any action, including actions predicated upon the civil liability provisions of U.S. federal securities laws or any other laws of the United States. Additionally, rights predicated solely upon civil liability provisions of U.S. federal securities laws or any other laws of the United States may not be enforceable in original actions, or actions to enforce judgments obtained in U.S. courts, brought in Canadian courts, including courts in the Provinces of British Columbia and Alberta.

Furthermore, provisions in our articles will become effective upon receipt of shareholder approval and subsequent filing with corporate registry, and prior to the consummation of this offering provided that, unless we consent in writing to the selection of an alternative forum, the Court of Queen's Bench of Alberta and the appellate courts therefrom,

to the fullest extent permitted by law, will be the sole and exclusive forum for certain actions or proceedings brought against us, our directors and/or our officers.

U.S. holders of the company's shares may suffer adverse tax consequences if we are characterized as a passive foreign investment company.

The rules governing "passive foreign investment companies," ("PFICs"), can have adverse effects on U.S. Holders (as defined under "Material U.S. Federal Income Tax Considerations for U.S. Holders") for U.S. federal income tax purposes. Generally, if, for any taxable year, at least 75% of our gross income is passive income, or at least 50% of the value of our assets (generally, using a quarterly average) is attributable to assets that produce passive income or are held for the production of passive income (including cash), we would be characterized as a PFIC for U.S. federal income tax purposes. The determination of whether we are a PFIC, which must be made annually after the close of each taxable year, depends on the particular facts and circumstances and may also be affected by the application of the PFIC rules, which are subject to differing interpretations. Our status as a PFIC will depend on the composition of our income and the composition and value of our assets (including goodwill and other intangible assets), which will be affected by how, and how quickly, we spend any cash that is raised in this offering or in any other financing transaction. Moreover, our ability to earn specific types of income that will be treated as non-passive for purposes of the PFIC rules is uncertain with respect to future years. We believe we were classified as a PFIC during the taxable year ended December 31, 2020. Based on current business plans and financial expectations, we may be a PFIC for our taxable year ending December 31, 2021, or future taxable years, and we cannot provide any assurances regarding our PFIC status for any current or future taxable years.

If we are a PFIC, a U.S. Holder would be subject to adverse U.S. federal income tax consequences, such as ineligibility for certain preferred tax rates on capital gains or on actual or deemed dividends, interest charges on certain taxes treated as deferred, and additional reporting requirements under U.S. federal income tax laws and regulations. A U.S. Holder may in certain circumstances mitigate adverse tax consequences of the PFIC rules by filing an election to treat the PFIC as a qualified electing fund, or QEF, or, if shares of the PFIC are "marketable stock" for purposes of the PFIC rules, by making a mark-to-market election with respect to the shares of the PFIC. U.S. Holders should be aware that, for each tax year, if any, that we are a PFIC, we can provide no assurances that we will satisfy the record keeping requirements of a PFIC, or that we will make available to U.S. Holders the information such U.S. Holders require to make a QEF election with respect to us, and as a result, a QEF election may not be available to U.S. Holders. For more information, see the discussion below under "Material U.S. Federal Income Tax Considerations to U.S. Holders—Passive Foreign Investment Company Rules". You should consult your own tax advisors regarding the potential consequences to you if we were or were to become a PFIC, including the availability, and advisability, of, and procedure for making, QEF elections and mark-to-market elections.

Our bylaws provide that any derivative actions, actions relating to breach of fiduciary duties and other matters relating to our internal affairs will be required to be litigated in Canada, which could limit shareholders' ability to obtain a favorable judicial forum for disputes with us.

We have included a forum selection provision in our bylaws that provides that, unless we consent in writing to the selection of an alternative forum, the Supreme Court of Alberta and appellate courts therefrom (or, failing such Court, any other "court" as defined in the CBCA, having jurisdiction, and the appellate courts therefrom), will be the sole and exclusive forum for (1) any derivative action or proceeding brought on our behalf, (2) any action or proceeding asserting a breach of fiduciary duty owed by any of our directors, officers or other employees to us, (3) any action or proceeding asserting a claim arising pursuant to any provision of the CBCA or our articles or bylaws; or (4) any action or proceeding asserting a claim otherwise related to our "affairs" (as defined in the CBCA). Our forum selection provision also provides that our shareholders are deemed to have consented to personal jurisdiction in the Province of Alberta and to service of process on their counsel in any foreign action initiated in violation of our provision. Therefore, it may not be possible for shareholders to litigate any action relating to the foregoing matters outside of the Province of Alberta. To the fullest extent permitted by law, our forum selection provision will also apply to claims arising under U.S. federal securities laws. In addition, investors cannot waive compliance with U.S. federal securities laws and the rules and regulations thereunder.

Our forum selection provision seeks to reduce litigation costs and increase outcome predictability by requiring derivative actions and other matters relating to our affairs to be litigated in a single forum. While forum selection clauses in corporate charters and bylaws/articles are becoming more commonplace for public companies in the United

States and have been upheld by courts in certain states, a recent decision of the Supreme Court of Canada has cast some uncertainty as to whether forum selection clauses would be upheld in Canada. Accordingly, it is possible that the validity of our forum selection provision could be challenged and that a court could rule that such provision is inapplicable or unenforceable. If a court were to find our forum selection provision inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions and we may not obtain the benefits of limiting jurisdiction to the courts selected.

Future sales and issuances of our common shares or rights to purchase common shares, including pursuant to our Stock Option and Incentive Plan, could result in additional dilution of the percentage ownership of our shareholders and could cause our share price to fall.

We expect that significant additional capital will be needed in the future to continue our planned operations, including conducting clinical trials, expanded research and development activities, and costs associated with operating as a public company. To raise capital, we may sell common shares, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. If we sell common shares, convertible securities or other equity securities, investors may be materially diluted by subsequent sales. Such sales may also result in material dilution to our existing shareholders, and new investors could gain rights, preferences, and privileges senior to the holders of our common shares, including securities sold in this offering.

Sales of a substantial number of our common shares by our existing shareholders in the public market could cause our share price to fall.

If our existing shareholders sell, or indicate an intention to sell, substantial amounts of our common shares in the public market after the lock-up and other legal restrictions on resale discussed in this prospectus lapse, the trading price of our common shares could decline. Based on the number of common shares outstanding as of , 2021, upon the closing of this offering, we will have outstanding a total of common shares, assuming none of the warrants issued in this offering are exercised and no sale of any pre-funded warrants. Of these shares, only the common shares sold in this offering by us, plus any shares sold upon exercise of the underwriters' option to purchase additional shares, will be freely tradable without restriction in the public market immediately following this offering, unless purchased by our affiliates. In connection with this offering, our officers, directors and significant shareholders have agreed to be subject to a contractual lock-up with the underwriters, which will expire 90 days after the date of this prospectus. The representatives, however, may, in their sole discretion, permit our officers, directors and other shareholders who are subject to these lock-up agreements to sell shares prior to the expiration of the lock-up agreements.

Common shares that are either subject to outstanding options reserved for future issuance under our Equity Incentive Plan, will become eligible for sale in the public market to the extent permitted by the provisions of various vesting schedules, the lock-up agreements and Rule 144 under the Securities Act of 1933, as amended, (the "Securities Act"). Additionally, common shares that are issuable upon the exercise of outstanding warrants to purchase our common shares, which will become warrants to purchase common shares in connection with the closing of this offering, will become eligible for sale in the public market to the extent permitted by the lock-up agreements and Rule 144 under the Securities Act. If these additional common shares are sold, or if it is perceived that they will be sold, in the public market, the trading price of our common shares could decline.

We do not expect to pay dividends in the future. As a result, any return on investment may be limited to the value of our common stock.

We do not anticipate paying cash dividends on our common stock in the foreseeable future. The payment of dividends on our common stock will depend on our earnings, financial condition and other business and economic factors as our board of directors may consider relevant. If we do not pay dividends, our common shares may be less valuable because a return on an investment in our common shares will only occur if our stock price appreciates.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus includes "forward-looking statements" within the meaning of U.S. securities laws and "forward-looking information" within the meaning of Canadian securities laws, or collectively, forward-looking statements. Forward-looking statements include statements that may relate to our plans, objectives, goals, strategies, future events, future revenue or performance, capital expenditures, financing needs and other information that is not historical information. Many of these statements appear, in particular, under the headings "Prospectus Summary," "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Business." Forward-looking statements can often be identified by the use of terminology such as "subject to", "believe," "anticipate," "plan," "expect," "intend," "estimate," "project," "may," "will," "should," "would," "could," "can," the negatives thereof, variations thereon and similar expressions, or by discussions of strategy. In addition, any statements or information that refer to expectations, beliefs, plans, projections, objectives, performance or other characterizations of future events or circumstances, including any underlying assumptions, are forward-looking. In particular, forward-looking statements in this prospectus include, but are not limited to, statements about:

- our ability to obtain additional financing;
- the accuracy of our estimates regarding expenses, future revenues and capital requirements;
- the success and timing of our preclinical studies and clinical trials;
- our ability to obtain and maintain regulatory approval of XORTO and any other product candidates we may develop, and the labeling under any approval we may obtain;
- regulatory developments in the United States and other countries;
- the performance of third-party manufacturers;
- our plans to develop and commercialize our product candidates;
- our ability to obtain and maintain intellectual property protection for our product candidates;
- the successful development of our sales and marketing capabilities;
- the potential markets for our product candidates and our ability to serve those markets;
- the rate and degree of market acceptance of any future products;
- the success of competing drugs that are or become available; and
- the loss of key scientific or management personnel.

All forward-looking statements, including, without limitation, our examination of historical operating trends, are based upon our current expectations and various assumptions. Certain assumptions made in preparing the forward-looking statements include:

- the availability of capital to fund planned expenditures;
- prevailing regulatory, tax and environmental laws and regulations;
- the ability to secure necessary personnel, equipment and services
- our ability to manage our growth effectively;
- the absence of material adverse changes in our industry or the global economy;
- trends in our industry and markets;
- our ability to maintain good business relationships with our strategic partners and partners;
- our ability to comply with current and future regulatory standards;
- our ability to protect our intellectual property rights;

- our continued compliance with third-party license terms and the non-infringement of third-party intellectual property rights;
- our ability to manage and integrate acquisitions; and
- our ability to raise sufficient debt or equity financing to support our continued growth.

We believe there is a reasonable basis for our expectations and beliefs, but they are inherently uncertain. We may not realize our expectations, and our beliefs may not prove correct. Actual results could differ materially from those described or implied by such forward-looking statements. The following uncertainties and factors, among others (including those set forth under "Risk Factors"), could affect future performance and cause actual results to differ materially from those matters expressed in or implied by forward-looking statements:

- our ability to obtain regulatory approval for our product candidates without significant delays;
- the predictive value of our current or planned clinical trials;
- delays with respect to the development and commercialization of our product candidates, which may cause increased costs or delay receipt of product revenue;
- our ability to enroll subjects in clinical trials and thereby complete trials on a timely basis;
- the design or our execution of clinical trials may not support regulatory approval;
- the potential for our product candidates to have undesirable side effects;
- our ability to face significant competition;
- no regulatory agency has made a determination that any of our product candidates are safe or effective for use by the general public or for any indication;
- the competitive threat of generic or other follow-on products;
- the likelihood of broad market acceptance of our product candidates;
- our ability to obtain Orphan Drug Designation or exclusivity for some or all of our product candidates;
- our ability to commercialize products outside of the United States;
- the outcome of reimbursement decisions by third-party payors relating to our products;
- our expectations with respect to the market opportunities for any product candidate that we or our strategic partners develop;
- our ability to pursue product candidates that may be profitable or have a high likelihood of success;
- our ability to use and expand our therapeutic platforms to build a pipeline of product candidates;
- our ability to meet the requirements of ongoing regulatory review;
- the threat of product liability lawsuits against us or any of our strategic partners;
- changes in product candidate manufacturing or formulation that may result in additional costs or delay;
- the potential disruption of our business and dilution of our shareholdings associated with acquisitions and joint ventures;
- the potential for foreign governments to impose strict price controls;
- the risk of security breaches or data loss, which could compromise sensitive business or health information;
- current and future legislation that may increase the difficulty and cost of commercializing our product candidates;
- economic, political, regulatory and other risks associated with international operations;

- our exposure to legal and reputational penalties as a result of any of our current and future relationships with various third parties;
- our ability to comply with export control and import laws and regulations;
- our history of significant losses since inception;
- our ability to generate revenue from product sales and achieve profitability;
- our requirement for substantial additional funding;
- the potential dilution to our shareholders associated with future financings;
- unstable market and economic conditions;
- currency fluctuations and changes in foreign currency exchange rates;
- restrictions on our ability to seek financing, which are imposed by our current credit agreement and or may be imposed by future debt;
- our ability to maintain existing and future strategic partnerships;
- our ability to realize the anticipated benefits of our strategic partnerships;
- our ability to secure future strategic partners;
- our intention to rely on third-party manufacturers to produce our clinical product candidate supplies;
- our reliance on third parties to oversee clinical trials of our product candidates and, in some cases, maintain regulatory files for those product candidates;
- our reliance on the performance of independent clinical investigators and CROs;
- our reliance on third parties for various operational and administrative aspects of our business including our reliance on third parties' cloud-based software platforms;
- our ability to operate without infringing the patents and other proprietary rights of third parties;
- our ability to obtain and enforce patent protection for our product candidates and related technology;
- our patents could be found invalid or unenforceable if challenged;
- our intellectual property rights may not necessarily provide us with competitive advantages;
- we may become involved in expensive and time consuming patent lawsuits;
- we may be unable to protect the confidentiality of our proprietary information;
- the risk that the duration of our patents will not adequately protect our competitive position;
- our ability to obtain protection under the Hatch-Waxman Amendments and similar foreign legislation;
- our ability to comply with procedural and administrative requirements relating to our patents;
- the risk of claims challenging the inventorship of our patents and other intellectual property;
- our intellectual property rights for some of our product candidates are dependent on the abilities of third parties to assert and defend such rights;
- patent reform legislation and court decisions can diminish the value of patents in general, thereby impairing our ability to protect our product candidates;
- we may not be able to protect our intellectual property rights throughout the world;

- we will require FDA approval for any proposed product candidate names and any failure or delay associated with such approval may adversely affect our business;
- the risk of employee misconduct including noncompliance with regulatory standards and insider trading;
- our ability to market our products in a manner that does not violate the law and subject us to civil or criminal penalties;
- if we do not comply with law regulating the protection of the environment and health and human safety, our business could be adversely affected;
- we risk losing our "foreign private issuer" status;
- our ability to retain key executives and attract and retain qualified personnel; and
- our ability to manage organizational growth.

Consequently, forward-looking statements should be regarded solely as our current plans, estimates and beliefs. You should not place undue reliance on forward-looking statements. We cannot guarantee future results, events, levels of activity, performance or achievements. We do not undertake and specifically decline any obligation to update, republish or revise forward-looking statements to reflect future events or circumstances or to reflect the occurrences of unanticipated events, except as required by law.

PRESENTATION OF FINANCIAL INFORMATION

We prepare and report our consolidated financial statements in accordance with IFRS. We maintain our books and records in Canadian dollars.

We have made rounding adjustments to some of the figures included in this prospectus. Accordingly, numerical figures shown as totals in some tables may not be an arithmetic aggregation of the figures that precede them.

EXCHANGE RATE DATA

We express all amounts in this prospectus in Canadian dollars, except where otherwise indicated. References to "$" are to Canadian dollars and references to "US$" are to U.S. dollars. The following table sets forth, for the periods indicated, average rate of exchange for one U.S. dollar, expressed in Canadian dollars, for the years ended December 31, 2020, 2019 and 2018, as supplied by the Bank of Canada:

Year Ended	Average
December 31, 2020	0.7454
December 31, 2019	0.7536
December 31, 2018	0.7718

On August 31, 2021, the Bank of Canada rate of exchange was $1.00 = US$0.7926.

MARKET, INDUSTRY AND OTHER DATA

Unless otherwise indicated, information contained in this prospectus concerning our industry and the market in which we operate, including our market position, market opportunity and market size, is based on information from various sources such as industry publications, on assumptions that we have made based on such data and other similar sources and on our knowledge of the markets for our products. These data involve a number of assumptions and limitations.

In addition, projections, assumptions and estimates of our future performance and the future performance of the industry in which we operate is necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described in the section entitled "Risk Factors" and elsewhere in this prospectus. These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties and by us.

USE OF PROCEEDS

We estimate that the net proceeds from this offering will be approximately US$15.0 million, based upon an assumed initial public offering price of US$6.00 per common share unit, without deducting underwriting discounts and commissions and estimated offering expenses payable by us and assuming none of the warrants issued in this offering are exercised. If the underwriters exercise their over-allotment option to purchase additional shares and/or pre-funded warrants from us in full, we estimate that the gross proceeds will be approximately US$17.25 million without deducting underwriting discounts and commissions and estimated offering expenses payable by us.

A US$1.00 increase or decrease in the assumed initial public offering price of US$6.00 per common share unit would increase or decrease the net proceeds to us from this offering by approximately US$2.5 million, assuming the number of common share units and/or pre-funded warrant units offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us. An increase or decrease of 100,000 in the number of securities offered by us would increase or decrease the net proceeds to us from this offering by approximately US$0.6 million, assuming the assumed initial public offering price remains the same and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us.

We are undertaking this offering in order to increase our liquidity and raise capital to further develop and advance our pipeline of product candidates. We intend to use proceeds from the offering in approximately the following proportions: XRx-008: 29%; XRx-101: 70%; XRx-225: 1%. We anticipate funding operations and general corporate purposes, which may include the further research and development, clinical trials, manufacture of active pharmaceutical ingredients and drug product to support clinical trials. With respect to XRx-008, we intend to use proceeds to support regulatory filings necessary to complete a clinical bio availability study of the XRx-008 drug product. With respect to XRx-101, we intend to use proceeds to support regulatory filings necessary to complete a clinical bio availability study of the XRx-101 and including a Phase 3 clinical study. With respect to XRx-225, we intend to use the proceeds to conduct animal testing and a proof of concept study.

We will give the highest priority to fund the advancement of the XRx-008 program. The rationale for this approach is that we perceive that the probability of a large pharmaceutical company partnership is higher for this XRx-008 program. We expect that additional public capital market raises will be needed to advance the above mentioned programs.

Unless otherwise indicated in a prospectus supplement, we currently intend to use the net proceeds from the sale of the securities offered hereby for general corporate purposes, which may include the further research and development, clinical trials, manufacture and commercialization of our product candidates and of our technologies, working capital, capital expenditures and other general corporate purposes. We may also use a portion of the net proceeds to acquire or invest in businesses, products and technologies that are complementary to our own, as well as for capital expenditures. We have not specifically allocated the proceeds to those purposes as of the date of this prospectus. The precise amount and timing of the application of proceeds from the sale of securities will depend on our funding requirements and the availability and cost of other funds at the time of sale. Allocation of proceeds of a particular series of securities, or the principal reason for the offering if no allocation has been made, will be described in the applicable prospectus supplement or in any related free writing prospectus.

DIVIDEND POLICY

We have never paid any dividends on our common shares or any of our other securities. We currently intend to retain any future earnings to finance the growth and development of our business, and we do not anticipate that we will declare or pay any cash dividends in the foreseeable future. Any future determination to pay cash dividends will be at the discretion of our board of directors and will be dependent upon our financial condition, results of operations, capital requirements, restrictions under any future indebtedness and other factors the board of directors deems relevant.

CAPITALIZATION

The following table sets forth our cash as well as capitalization as of June 30, 2021 after giving effect to the Proposed Share Consolidation:

- on an actual basis;
- on an as adjusted basis to give effect to the sale of securities offered hereby at the assumed combined offering price of US$6.00 per security, ($7.51 per security), without deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. The assumed offering price may not be the final price of the Offering and will be adjusted based on the actual initial public offering price and other terms of our initial public offering determined at pricing; and
- U.S. Dollar amounts have been translated into Canadian Dollars based on the September 3, 2021 daily rate of exchange, which was US$1.00 = $1.2518 or $1.00 = U.S.$0.7988 as reported by the Bank of Canada and have been provided solely for the convenience of the reader.

You should read this table together with "Management's Discussion and Analysis of Financial Condition and Results of Operations" included elsewhere in this prospectus, and our financial statements and related notes thereto.

	As of June 30, 2021	
	Actual	Pro forma as adjusted (1)
	(In thousands, except share data)	
Cash	$ 5,149	23,926
Equity		
Share capital	$ 12,255	31,032
Common Shares, unlimited authorized shares, without par value; 9,376,210 shares issued and outstanding, actual; 2,500,000 shares issued and outstanding, pro forma as adjusted		
Share-based payments, warrant reserve and other	$ 1,463	1,463
Obligation to Issue Shares	$ 32	32
Deficit	$ (10,430)	(10,430)
Total Equity	$ 3,320	22,097
Total Capitalization	$ 3,320	22,097

(1) Pro-forma as adjusted does not give effect to the impact of Common Share Purchase Warrants or the Underwriter's over-allotment option.

Each US$1.00 ($1.2518) increase (decrease) in the assumed combined public offering price of US$6.00 per common share unit ($7.51), would increase (decrease) the pro forma amount of cash and cash equivalents, total shareholders' equity and total capitalization by approximately US$2.5 million ($3.129 million), assuming the number of common share units offered by us, as set forth on the cover page of this prospectus, remains the same and without deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. We may also increase or decrease the number of securities we are offering. Each increase (decrease) of 100,000 securities in the number of securities offered by us would increase (decrease) the pro forma amount of cash and cash equivalents, total shareholders' equity and total capitalization by approximately US$600,000 ($751,080), assuming that the assumed public offering price remains the same, and without deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. The pro forma information discussed above is illustrative only and will be adjusted based on the actual public offering price and other terms of this offering determined at pricing.

- The number of common shares to be outstanding after this offering is based on an aggregate of 9,376,210 shares outstanding as of August 31, 2021 after giving effect to the Proposed Share Consolidation. The table above excludes:

- 570,698 common shares issuable upon the exercise of outstanding options to issue common shares, as of August 31, 2021, at a weighted-average exercise price of $3.05 per share;

- 2,144,005 common shares issuable upon the exercise of outstanding common share warrants, as of August 31, 2021, at a weighted-average exercise price of $4.70 per share.

For additional information regarding our capital structure, see "Description of Share Capital."

DILUTION

Investors purchasing common share units and/or pre-funded warrant units in this offering will experience immediate and substantial dilution in the as adjusted net tangible book value of their common shares. Dilution in as adjusted net tangible book value represents the difference between the assumed public offering price per unit and the as adjusted net tangible book value per common share immediately after the offering.

The historical net tangible book value of our common shares as of June 30, 2021 was $3,083,987 or $0.33 per share after giving effect to the Proposed Share Consolidation. Historical net tangible book value per common share represents our total tangible assets (total assets less intangible assets) less total liabilities divided by the number of common shares outstanding as of that date after giving effect to the Proposed Share Consolidation.

After giving effect to the sale of common share units in this offering (assuming no pre-funded warrant units are sold in this offering and excluding the common shares issuable upon the exercise of the Common Share Purchase Warrants being offered in this offering) at the assumed offering price of US$6.00 per common share unit ($7.51 per common share unit) (which is based on US$0.51 per common share which is the closing price of our common shares on the CSE on September 3, 2021 based on the September 3, 2021 daily rate of exchange was US$1.00 = $1.2518 or $1.00 = US$0.7988 as reported by the Bank of Canada, giving effect to a proposed share consolidation ratio of 11.740:1), and without deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, our net tangible book value as of June 30, 2021 would have been $21,860,987, or $1.84 per share. The assumed offering price may not be the final price of the Offering and will be adjusted based on the actual initial public offering price and other terms of our initial public offering determined at pricing. This amount represents an immediate increase in net tangible book value of $1.51 per share to our existing shareholders and an immediate dilution in net tangible book value of approximately $4.16 per share to new investors purchasing our common shares in this offering. We determine dilution by subtracting the net tangible book value per share after the offering from the amount of cash that a new investor paid for a common share unit. U.S. dollar amounts have been translated into Canadian dollars at a rate of US$1.00 to $1.2518 and have been provided solely for the convenience of the reader.

The following table illustrates this dilution on a per share basis after giving effect to the Proposed Share Consolidation:

Assumed offering price per common share unit[(1)]	$	7.51
Historical net tangible book value per share as of June 30, 2021	$	0.33
Increase in net tangible book value per share attributable to Investors	$	1.51
Net tangible book value per share after the offering	$	1.84
Dilution per share to new investors	$	4.16

(1) The assumed offering price may not be the final price of the offering and will be adjusted based on the actual initial public offering price and other terms of our initial public offering determined at pricing.

If the underwriters exercise their option to purchase 375,000 additional common shares and/or Common Share Purchase Warrants, the as adjusted net tangible book value of our common shares after this offering would be $24,677,537 or $2.01 per share representing an immediate increase in net tangible book value of approximately $1.68 per share to existing shareholders and an immediate dilution of $3.99 per share to the investors in this offering, without deducting the underwriting discount and estimated offering expenses payable by us.

The number of common shares to be outstanding after this offering is based on 9,376,210 common shares outstanding as of August 31, 2021 after giving effect to the Proposed Share Consolidation, and excludes:

- 570,698 common shares issuable upon the exercise of outstanding options to issue common shares, as of August 31, 2021, at a weighted-average exercise price of $3.05 per share;

- 2,144,005 common shares issuable upon the exercise of outstanding common share warrants, as of August 31, 2021, at a weighted-average exercise price of $4.70 per share.

The above discussion reflects the 11.740:1 Proposed Share Consolidation of our issued and outstanding common shares, options and warrants and the corresponding adjustment of all stock option and warrant exercise prices per share.

To the extent that outstanding options or warrants are exercised, you may experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities may result in further dilution to our shareholders.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion of our financial condition and results of operations contains important information about XORTX's business and its performance for the three and six months ended June 30, 2021 and 2020, and for the years ended December 31, 2020 and2019 and should be read together with our consolidated financial statements, prepared in accordance with IFRS, and the related notes and the other financial information included elsewhere in this prospectus. Amounts for subtotal, totals and percentage variances included in tables may not sum or calculate using the numbers as they appear in the tables due to rounding. This discussion contains forward-looking statements that involve significant risks and uncertainties. Our actual results, performance and achievements could differ materially from those anticipated in these forward-looking statements as a result of various factors, including those discussed below and elsewhere in this prospectus, particularly under "Risk Factors" and "Cautionary Note Regarding Forward-Looking Statements."

Overview

XORTX Therapeutics is a clinical-stage biotechnology company focused on identifying, developing and commercializing therapies to treat progressive kidney disease modulated by aberrant purine and uric acid metabolism in renal and co-morbidities due to diabetic disease indications. Our key focus is the development of therapies for diseases such as ADPKD, AKI due to coronavirus COVID-19 infection, and T2DN.

Principal Product Candidates and Patents

Product Candidates

XORTX's product candidates are based upon unique proprietary formulations of oxypurinol with additional excipient ingredients, other uric acid lowering agents, and/or modified with other functional groups. XRx-008 is XORTX's proprietary oral formulation of oxypurinol, and shows increased oral bioavailability compared to oxypurinol alone. The XRx-008 product candidate is the subject of the Company's most advanced development program which is at a late clinical stage focused on demonstrating the potential of a novel therapy for ADPKD. XORTX is also developing the XRx-101 product candidate program, a second oral formulation of oxypurinol for use in suppressing AKI in patients infected with the coronavirus COVID-19 infection. XORTX's third product candidate is XRx-225, and the Company is currently evaluating xanthine oxidase inhibitor candidates for the XRx-225 product candidate program to treat T2DN.

Patents

XORTX is the exclusive licensee of two U.S. granted patents with claims to the use of all uric acid lowering agents to treat insulin resistance or diabetic nephropathy. XORTX possesses a license to a granted patent from the European Patent Office for treatment of diabetic nephropathy. In both the US and Europe, XORTX owns composition of matter patent applications for unique proprietary formulations of xanthine oxidase inhibitors, and the European patent application has been granted and is currently in the validation state process. Recently XORTX announced submission of a patent application to cover the use of uric acid lowering agents for the treatment of the health consequences of coronavirus COVID-19 infection. Additional patent applications to expand and extend coverage of uric acid lowering agents are currently contemplated.

Recent Developments

Private Placements and Warrant Exercises

After giving effect to the Proposed Share Consolidation, in January and February 2021, 365,113 warrants that were issued in connection with the February 2020 private placement were exercised for aggregate proceeds of $1,037,524. Of the warrants exercised, 339,493 were exercised at $2.94 per common share and 25,620 were exercised at $1.64 per common share in respect to certain finder's warrants that were issued in relation to that private placement.

After giving effect to the Proposed Share Consolidation, on February 9, 2021, the Company issued 2,085 units in a private placement offering at a subscription price of $2.94 per unit for gross proceeds of $6,121,572. Each unit comprised one common share of the Company and one common share purchase warrant. Each warrant entitles the holder, on exercise, to purchase one additional common share in the capital of the Company, at a price of $4.70, for a period of 5 years from the issuance of the units; provided, however, that, if, at any time following the expiry of the statutory four month hold period, the closing price of the common shares on the CSE is greater than $14.09 for 10 or more consecutive trading days, the warrants will be accelerated upon notice and the warrants will expire on the 30th calendar day following the date of such notice. In addition, the warrants are also subject to typical anti-dilution provisions and a ratchet provision that provides for an adjustment in the exercise price should the Company issue or sell common shares or securities convertible into common shares at a price (or conversion price, as applicable) less than the exercise price such that the exercise price shall be amended to match such lower price.

In connection with the private placement, the Company paid $171,085 in cash commissions and issued 58,291 finder's warrants. Each finder's warrant is exercisable into one common share at a price of $4.70 and having the same expiry, acceleration and anti-dilution provisions as the warrants included in the private placement. The common shares and warrants comprising the units issued pursuant to the private placement, and any common shares issued upon the exercise of the warrants or the finder's warrants, are subject to a four month hold period pursuant to applicable securities laws.

On February 28, 2020, the Company closed a first tranche of a 3,066,439 Unit Private Placement with the issuance of 1,555,317 Units for gross proceeds of $900,000 in cash and $50,000 on the conversion of certain payables into Units (while $1,606,320 in Units were issued in exchange for services to be provided). Each Unit was priced at $1.64 and comprised one common share and one common share purchase warrant exercisable at $2.94 for a period of one year from the issuance of the Units, provided, however, that if, at any time following the expiry of the statutory four month hold period, the closing price of the common shares on the CSE is greater than $4.11 for 10 or more consecutive trading days, the Company may notify the holder, by way of news release, that the warrants will expire on the 20th business day following the date of such notice, unless exercised by the holder before such date. The objective of this funding round is to advance ADPKD program toward a phase 3 registration trial in ADPKD.

December 2020 Notification from European Patent Office

On December 8, 2020, the Company the receipt of notification that the patent "Formulations of Xanthine Oxidase Inhibitors" will be granted by the European Patent Office. The patent covers compositions and methods of using XORTX's proprietary formulations of xanthine oxidase inhibitors for renal and other diseases where aberrant purine metabolism has been implicated in disease progression.

Partnership with Icahn School of Medicine

On November 16, 2020, the Company announced the topline results from the Company's partnership with the Icahn School of Medicine at Mount Sinai, New York ("Icahn School of Medicine"). The aim of this study was to characterize the incidence of AKI and hyperuricemia in patients hospitalized with COVID-19. The results of the data analysis show that in some individuals with COVID-19 infection, hyperuricemia increases early in and is associated with AKI. The data also strongly suggests that for those individuals with very high serum uric acid levels, this can contribute to worsening kidney outcomes. These topline results indicate that further clinical studies to lower uric acid in these individuals is warranted, and may improve AKI, dialysis, recovery and mortality outcomes.

Appointment of LONZA Group as Manufacturer

On April 30, 2020, the Company announced the appointment of LONZA Group as the manufacturer of GMP oxypurinol for the XRx-008 and XRx-101 clinical trial programs. The launch of oxypurinol manufacturing for both

XRx-008 and XRx-101 is the first step to advance these programs toward clinical testing. Lonza is a leading global provider of integrated healthcare solutions.

COVID-19 Developments

In March 2020, the outbreak of the novel strain of coronavirus, specifically identified as "Sars-CoV-2" which causes COVID-19 infections, resulted in governments worldwide enacting emergency measures to combat the spread of the virus. These measures, which include the implementation of travel bans, self-imposed quarantine periods and physical distancing, have caused material disruption to business globally resulting in an economic slowdown. Global equity markets have experienced significant volatility. The duration and impact of the COVID-19 Pandemic outbreak is unknown at this time, as is the efficacy of the government and central bank interventions. It is not possible to reliably estimate the length and severity of these developments and the impact on the financial results and condition of the Company in future periods.

On March 16, 2020, XORTX announced the filing of a provisional patent application and on March 15, 2021, a PCT application claiming priority to said provisional application covering the potential use of any uric acid lowering agent, and more specifically a xanthine oxidase inhibitor in the form of its XRx-101 product candidate to treat acute kidney injury related in patients infected with COVID-19.

Appointment of William Farley to Board of Directors

On May 12, 2021, William Farley was appointed to the Board of Directors of the Company.

Resignation of Allan Williams from the Board of Directors

On June 16, 2021, Allan Williams resigned from the Board of Directors of the Company.

Appointment of Jacqueline Le Saux to Board of Directors

On June 16, 2021, Jacqueline Le Saux was appointed to the Board of Directors of the Company.

Appointment of Stephen Haworth as Chief Medical Officer

Effective July 1, 2021, Stephen Haworth was appointed as the Chief Medical Officer of the Company.

Resignation of James Fairbairn and appointment of Amar Keshri as Chief Financial Officer

Effective July 1, 2021, James Fairbairn resigned as Chief Financial Officer and Amar Keshri was appointed as Chief Financial Officer.

August 2021 Notification from European Patent Office

On August 31, 2021, the Company received receipt of the patent grant "EPO National Stage of PCT International Application for Compositions and Methods for Treatment and Prevention of Hyperuricemia Related Health Consequences" by the European Patent Office. The patent covers compositions and methods for the prevention and treatment of diabetic nephropathy (DN) using uric acid lowering agent and specifically xanthine oxidase inhibitors.

Operating Results

The Company has a no history of earnings or cash flow from operations. The Company does not expect to generate material revenue or achieve self-sustaining operations for several years, if at all. To the extent that the Company has negative cash flow in future periods, the Company may need to allocate a portion of its cash reserves to fund such negative cash flow.

Three months ended June 30, 2021 compared to three months ended June 30, 2020

Net Loss. The Company incurred a comprehensive loss of $218,446, or $0.02 per share, for the three months ended June 30, 2021 compared to $373,736, or $0.05 per share in the three months ended June 30, 2020. The variance was primarily driven by gain on derivative warrant liability, offset by certain increases in expenses in the categories, and for the reasons, described below.

Consulting. For the three months ended June 30, 2021, consulting expenses increased by 180% compared to the three months ended June 30, 2020, from $33,708 to $94,480 as a result of more consultants being engaged during the quarter.

*Investor relations***.** For the three months ended June 30, 2021, investor relations expenses increased by 50% compared to the three months ended June 30, 2020, from $40,081 to $60,251, as the result of hiring investor relations consultants and public relations firms for general investor relations services before and after the financing.

Professional fees. For the three months ended June 30, 2021, professional fees increased by 2057% compared to the three months ended June 30, 2020, from $22,785 to $491,552 due to increased legal fees related to the financing that was completed and work related to advancing the Company's products, as well as legal fees related to the up listing to a U.S. exchange.

*Research and development***.** For the three months ended June 30, 2021, research and development expenses increased by 112% compared to the three months ended June 30, 2020, from $12,452 to $26,423 due to the commencement of work by Cato Research Canada ("Cato"), Bend Research ("Lonza") and Icahn School of Medicine. We currently do not track expenses by product candidate.

Share-based Payments. For the three months ended June 30, 2021, share-based payment expenses increased by 2917% compared to the three months ended June 30, 2020, from $6,728 to $202,990 as options granted vested over the period.

Gain on derivative warrant liability. For the three months ended June 30, 2021, the Company recorded gains on derivative warrant liability of $655,000 compared to $0 for the three months ended June 30, 2020. This relates to the warrants issued as part of the common share units. The warrants are classified as a derivative financial liability as they contain a ratchet provision that provides for an adjustment in the exercise price of the original warrants if shares or securities convertible to shares are sold at a price lower than the exercise price. The warrants are initially recognized at fair value and subsequently measured at fair value with changes recognized through profit or loss. This is a non-cash item.

Six months ended June 30, 2021 compared to six months ended June 30, 2020

Net Loss. The Company incurred a comprehensive loss of $2,391,900, or $0.26 per share, for the six months ended June 30, 2021 compared to $406,967, or $0.06 per share in the six months ended June 30, 2020. This increase was predominantly driven by an increase in expenses. The increased expenses were primarily driven by variances in the categories, and for the reasons, described below.

Consulting. For the six months ended June 30, 2021, consulting expenses increased by 406% compared to the six months ended June 30, 2020, from $48,708 to $246,341 as a result of more consultants being engaged during the period.

*Investor relations***.** For the six months ended June 30, 2021, investor relations expenses increased by 238% compared to the six months ended June 30, 2020, from $78,356 to $265,125, as the result of hiring investor relations consultants and public relations firms for general investor relations services before and after the financing.

Professional fees. For the six months ended June 30, 2021, professional fees increased by 1115% compared to the three months ended June 30, 2020, from $49,761 to $604,373 due to increased legal fees related to the financing that was completed and work related to advancing the Company's products, as well as legal fees related to the up listing to a U.S. exchange.

*Research and development***.** For the six months ended June 30, 2021, research and development expenses increased by 170% compared to the six months ended June 30, 2020, from $14,874 to $40,209 due to the commencement of work by Cato, Lonza, and Icahn School of Medicine. We currently do not track expenses by product candidate.

Share-based Payments. For the six months ended June 30, 2021, share-based payment expenses increased by 50% compared to the six months ended June 30, 2020, from $196,252 to $293,441 as more options were granted in both the six month period and in 2020 that vested over the period.

Transaction costs on derivative warrant liability and loss on derivative warrant liability. For the six months ended June 30, 2021, the Company incurred transaction costs on derivative warrant liability of $85,752 and losses on derivative warrant liability of $660,000, compared to $0 and $0, respectively, for the six months ended June 30,

2020. This relates to the warrants issued as part of the common share units. The warrants are classified as a derivative financial liability as they contain a ratchet provision that provides for an adjustment in the exercise price of the original warrants if shares or securities convertible to shares are sold at a price lower than the exercise price. The warrants are initially recognized at fair value and subsequently measured at fair value with changes recognized through profit or loss. The loss on derivative warrant liability is a non-cash item.

Liquidity and Capital Resources

As at June 30, 2021, the Company had a cash balance of $5,148,514 and working capital of $3,083,987 (on a cash basis the working capital was $6,675,987 after adding back the non-cash derivative warrant liability in the amount of $3,592,000, which will only be settled by issuing equity of the Company) as compared to a cash balance of $171,271 and a working capital of $1,021,928 as at December 31, 2020. During the year ended December 31, 2020, the Company closed a $2,556,320 private placement and during the six months ended June 30, 2021, the Company closed a private placement with the issuance of 2,085,714 units (after giving effect to the Proposed Share Consolidation) at a subscription price of $2.94 per unit for gross proceeds of $6,121,572. The Company issued 350,197 common shares (after giving effect to the Proposed Share Consolidation) for the exercise of warrants in the amount of $1,014,006. The Company's primary source of funding is by way of raising capital through the issuance of equity to third party investors. The Company believes that its current cash resources are sufficient for it to meet its existing monthly expenses, however additional funding to meet its obligations with regard to current outstanding accounts payable and for the Company to undertake its business plan will be required.

Although there is no certainty, management is of the opinion that additional funding for its projects and operations can be raised as needed. The Company is subject to a number of risks associated with the successful development of new products and their marketing and the conduct of its clinical studies and their results. The Company will have to finance its research and development activities and its clinical studies. To achieve the objectives in its business plan, the Company plans to raise the necessary capital and to generate revenues. It is anticipated that the product candidates developed by the Company will require approval from the FDA and equivalent organizations in other countries before their sale can be authorized. If the Company is unsuccessful in obtaining adequate financing in the future, research activities will be postponed until market conditions improve. These circumstances and conditions may cast significant doubt about the Company's ability to continue as a going concern.

Cash Flows

The following table represents a summary of our cash flows for the six months ended June 30, 2021 and 2020:

	Six Months ended June 30,	
	2021	**2020**
Net cash provided by (used in):		
Operating activities	$ (2,031,658)	$ (2,180,099)
Investing activities	(10,461)	(6,856)
Financing activities	7,019,362	2,441,728
Net increase (decrease) in cash and cash equivalents	5,148,514	313,387

Operating Activities

Cash used in operating activities for the six months ended June 30, 2021 was $2,031,658, compared to $2,180,099 for the six months ended June 30, 2020. The decrease of cash used of $148,441 was primarily due to the contract payments of $1,606,320 paid in the prior period offset by an increase in net loss for the year.

Investing Activities

Cash used in investing activities for the six months ended June 30, 2021 was $10,461, compared to $6,853 for the six months ended June 30, 2020. The cash used related to the acquisition of intangible assets during the period.

Financing Activities

Cash provided by financing activities in the six months ended June 30, 2021 was $7,019,362, compared to $2,441,728 for the six months ended June 30, 2020. The cash provided was due primarily to the private placement

that took place during the period raising gross proceeds of $6,121,572 through the issuance of 2,085,714 units (after giving effect to the Proposed Share Consolidation) at a subscription price of $2.94 per unit and upon exercise of the warrants.

Year ended December 31, 2020 compared to the year ended December 31, 2019

Net Loss. The Company incurred a comprehensive loss of $1,284,602, or $0.19 per share, for the year ended December 31, 2020 compared to $629,576, or $0.12 per share in the year ended December 31, 2019. This increase was predominantly driven by an increase in expenses. The increased expenses were primarily driven by the categories below

Consulting. For the year ended December 31, 2020, consulting expenses increased by 121% compared to the year ended December 31, 2019, from $46,561 to $102,880 due to an increase in non-clinical consultant activity.

*Investor relations***.** For the year ended December 31, 2020, investor relations expenses increased by 593% compared to the year ended December 31, 2019, from $34,782 to $241,177, as the result of hiring investor relations consultants and public relations firms for marketing campaigns.

Professional fees. For the year ended December 31, 2020, professional fees increased by 50% compared to the year ended December 31, 2019, from $108,427 to $162,580, due to an increase in legal fees.

*Research and development***.** For the year ended December 31, 2020, research and development expenses increased by 595% compared to the year ended December 31, 2019, from $39,897 to $277,455 due to the commencement of work by Cato Research Canada ("Cato"), Bend Research ("Lonza") and Icahn School of Medicine.

Share-based payments. For the year ended December 31, 2020, share-based payments increased by 1015% compared to the year ended December 31, 2019, from $26,317 to $293,443 due to 281,090 options being granted to directors, officers, and consultants. This disclosure gives effect to the Proposed Share Consolidation.

Impairment of intangible assets. For the year ended December 31, 2020, impairment of intangible assets increased compared to the year ended December 31, 2019, from $0 to $64,562 as a result of the Company determining that it was no longer feasible to complete the purchase option surrounding one of the intellectual property rights and writing off $64,562 of intangible assets to reduce the carrying value of the purchase option.

Recovery of provision. During the year ended December 31, 2020, the Company had the option to pay $75,000 to purchase certain patent rights. However, during the year ended December 31, 2020, the Company determined that it was no longer feasible and the provision was reversed.

Research and Development Expense

Research and development expenses consist of expenses incurred in performing research and development activities. These expenses include conducting research experiments, preclinical studies, and other indirect expenses in support of advancing our product candidates and therapeutic platforms. The following items are included in research and development expenses:

- employee-related expenses such as salaries and benefits;
- employee-related overhead expenses such as facilities and other allocated items;
- share-based compensation expense to employees and consultants engaged in research and development activities;
- depreciation of laboratory equipment, computers and leasehold improvements;
- fees paid to consultants, subcontractors, CROs, and other third party vendors for work performed under our clinical trials and preclinical studies, including but not limited to laboratory work and analysis, database management, statistical analysis, and other items; and
- amounts paid to vendors and suppliers for laboratory supplies.

The following table shows a summary of our research and development expenses for the years ended December 31, 2020, 2019 and 2018. We do not currently track expenses by product candidate.

	Year Ended December 31,		
	2020	2019	2018
Research and development expense			
	$ 277,455	$ 39,897	$ 342,851
Other research activities	—	—	—
Total research and development expense	$ 277,455	$ 39,897	$ 342,851
Less: Government credits	—	—	—
	$ 277,455	$ 39,897	$ 342,851

General and Administrative Expense

General and administrative expenses consist of salaries and related benefit costs for employees in our executive, finance, intellectual property, business development, human resources and other support functions, legal and professional fees, and travel and general office expenses. We expect to incur additional expenses related to supporting our ongoing research and development activities, operating as a public company and other administrative expenses.

Other Income (Expense)

Other income (expense) consists of accretion on convertible debt, interest expenses and foreign exchange gains and losses, as well as one-time items such as impairment charges, forgiveness of debt and recoveries of expenses.

Liquidity and Capital Resources

As at December 31, 2020, the Company had a cash balance of $171,271 and working capital of $1,021,928 as compared to a cash balance of $58,614 and a working capital deficiency of $484,450 as at December 31, 2019. During the period, the Company closed the private placement of 1,555,317 Units (after giving effect to the Proposed Share Consolidation) for gross proceeds of $2,556,319. The Company's primary source of funding is by way of raising capital through the issuance of equity to third party investors. Given the nature of the Company's low monthly expenses and that favorable repayment agreements relating to existing outstanding accounts payable, including that $518,084 of the existing accounts payable and accrued liability balances are due to related parties, the Company believes that its current cash resources are sufficient for it to meet its existing monthly expenses, however additional funding to meet its obligations with regard to current outstanding accounts payable and for the Company to undertake its business plan will be required.

Although there is no certainty, management is of the opinion that additional funding for its projects and operations can be raised as needed. The Company is subject to a number of risks associated with the successful development of new products and their marketing and the conduct of its clinical studies and their results. The Company will have to finance its research and development activities and its clinical studies. To achieve the objectives in its business plan, the Company plans to raise the necessary capital and to generate revenues. It is anticipated that the product candidates developed by the Company will require approval from the FDA and equivalent organizations in other countries before their sale can be authorized. If the Company is unsuccessful in obtaining adequate financing in the future, research activities will be postponed until market conditions improve. These circumstances and conditions may cast significant doubt about the Company's ability to continue as a going concern.

Cash Flows

The following table represents a summary of our cash flows for the years ended December 31, 2020 and 2019:

	Year Ended December 31,	
	2020	2019
Net cash provided by (used in):		
Operating activities	$ (728,401)	$ (249,580)
Investing activities	(14,350)	(7,037)
Financing activities	855,408	55,212
Net increase (decrease) in cash and cash equivalents		

Operating Activities

Cash used in operating activities for the year ended December 31, 2020 was $728,401, compared to $249,580 for the year ended December 31, 2019. The increase of cash used of $393,821 was primarily due to the increased research and development activities, expenses related to expanding and growing our business, and expenses related to being a public company in Canada.

Investing Activities

Cash used in investing activities for the year ended December 31, 2020 was $14,350, compared to $7,037 for the year ended December 31, 2019. The increase of cash used was primarily due to the acquisition of intangible assets during the period.

Financing Activities

Cash provided by financing activities in the year ended December 31, 2020 was $855,408, compared to $55,212 for the year ended December 31, 2019. The increase in cash provided was due primarily to the private placement that took place during the period raising gross proceeds of $2,556,320 through the issuance of 1,555,317, at a price of $1.64 per unit, of which $900,000 was received in cash.

Funding Requirements

We have not generated any revenue from product sales to date and do not expect to do so until such time as we obtain regulatory approval of and commercialize one or more of our product candidates. As we are currently in clinical and preclinical stages of development, it will be some time before we expect to achieve this and it is uncertain that we ever will. We expect that we will continue to increase our operating expenses in connection with ongoing clinical trials and preclinical activities and the development of product candidates in our pipeline. We expect to continue our strategic partnerships and will look for additional collaboration opportunities. We also expect to continue our efforts to pursue additional grants and refundable tax credits from the Canadian government in order to further our research and development, although we do not currently track expenses by product candidate. Although it is difficult to predict our funding requirements, based upon our current operating plan, we anticipate that our existing cash and cash equivalents and short term investments as of June 30, 2021, combined with the net proceeds of this offering, will enable us to advance the clinical development of XRx-008 and XRx-101 product candidates. We may also be eligible to receive certain research, development and commercial milestone payments in the future, as described under "Business – Strategic Partnerships and Collaborations." However, because successful development of our product candidates and the achievement of milestones by our strategic partners is uncertain, we are unable to estimate the actual funds we will require to complete the research, development and commercialization of product candidates.

Contractual Obligations and Contingent Liabilities

Lease Commitments

The Company does not have any lease commitments.

Other Commitments

The Company has entered into a long-term employment agreement with the President and CEO of the Company. The agreement has a termination clause whereby he is entitled to the equivalent of 6 times his then current monthly salary if terminated prior to August 1, 2022, or 12 times his then current monthly salary if terminated on or after August 1, 2022. As of June 30, 2021, the President and CEO's annual salary was $192,000.

Off-Balance Sheet Arrangements

We have no material undisclosed off-balance sheet arrangements that have or are reasonably likely to have, a current or future effect on our results of operations or financial condition.

Financial and Capital Risk Management

The Company's financial instruments consist of cash, accounts payable and accrued liabilities, and the liability component on convertible loans. These financial instruments are classified as financial assets at FVTPL and financial liabilities at amortized cost. The fair values of these financial instruments approximate their carrying values at June 30, 2021, due to their short-term nature. The Company thoroughly examines the various financial instruments and risks to which it is exposed and assesses the impact and likelihood of those risks. These risks include foreign currency risk, interest rate risk, market risk, credit risk, and liquidity risk. Where material, these risks are reviewed and monitored by the Board of Directors.

The Company is exposed to foreign currency fluctuations for general and administrative transactions denominated in Canadian Dollars. The majority of the Company's cash is kept in Canadian dollars. As at December 31, 2020 the Company had an insignificant amount of cash denominated in US dollars that was subject to exchange rate fluctuations between the Canadian dollar and the U.S. dollar.

Application of Critical Accounting Policies and Estimates

Our consolidated financial statements have been prepared in accordance with IFRS. The preparation of these financial statements requires us to make estimates and assumptions that amounts reported in our consolidated financial statements and accompanying notes. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances. The Company is subject to uncertainties such as the impact of future events, economic and political factors, and changes in the Company's business environment; therefore, actual results could differ from these estimates. Accordingly, the accounting estimates used in the preparation of the Company's consolidated financial statements will change as new events occur, as more experience is acquired, as additional information is obtained, and as the Company's operating environment evolves.

We believe that the accounting policies discussed below are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management's judgments and estimates. See Note 3 to our consolidated financial statements appearing at the end of this prospectus for a description of our other significant accounting policies.

Segment Reporting

We view our operations and manage our business in one segment, which is the development and commercialization of biotechnologies, initially focused on the treatment of progressive kidney disease.

Implications of Being an Emerging Growth Company

We are an "emerging growth company" within the meaning of the federal securities laws. For as long as we are an emerging growth company, we will not be required to comply with the requirements that are applicable to other public companies that are not "emerging growth companies" including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, the reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and the exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and shareholder approval of any golden parachute payments not previously approved. We intend to take advantage of these reporting exemptions until we are no longer an emerging growth company. We have elected not to take advantage of the extended transition period allowed for emerging growth companies for complying with new or revised accounting guidance as allowed by Section 107 of the JOBS Act and Section 7(a)(2)(B) of the Securities Act. For a description of the qualifications and other requirements applicable to emerging growth companies and certain elections that we have made due to our status as an emerging growth company, see "Risk Factors Risks Related To This Offering And Our Common Stock – We are an "emerging growth company," and any decision on our part to comply only with certain reduced reporting and disclosure requirements applicable to emerging growth companies could make our common shares less attractive to investors." on page 53 of this prospectus.

Trend Information

Other than as disclosed elsewhere in this prospectus, we are not aware of any trends, uncertainties, demands, commitments, or events that are reasonably likely to have a material effect on our net revenues, income from continuing operations, profitability, liquidity or capital resources, or that would cause reported financial information not necessarily to be indicative of future operating results or financial condition.

BUSINESS

Overview

XORTX Therapeutics is a clinical-stage biotechnology company focused on identifying, developing and commercializing therapies to treat progressive kidney disease modulated by aberrant purine and uric acid metabolism in renal indications such as ADPKD, AKI due to coronavirus COVID-19 infection, and T2DN. While we are preparing to launch clinical studies, to date we have not conducted any clinical trials for any of our product candidates.

Our focus is on developing three therapeutic product candidates to slow or reverse the progression of kidney disease in patients at risk of end stage kidney failure, address the immediate need of individuals facing coronavirus COVID-19 infection-induced AKI, and the identification of other opportunities where our existing and new intellectual property can be leveraged to address health issues. We believe that our innovative technology is underpinned by well-established research and insights into the underlying biology of oxypurinol, a powerful uric acid lowering agent that works by effectively inhibiting xanthine oxidase.

While oxypurinol has not received final FDA marketing approval, we plan to leverage existing published studies and a prior FDA review for the indication of allopurinol intolerant gout under the 505(b)(2) development pathway so that we can combine the power of oxypurinol with our capacity to improve existing drugs that can be adapted for different disease indications where increased circulating uric acid is a common denominator, such as polycystic kidney disease, pre-diabetes, insulin resistance, metabolic syndrome, diabetes, diabetic nephropathy, and infections. Our formulations of oxypurinol, either combined with additional excipient ingredients, other uric acid lowering agents, and/or modified with other functional groups as new chemical entities, are being developed to address diseases associated with the renal system and the health consequences of diabetes, where evidence indicates a pathogenic role for acutely or chronically high serum uric acid. One of our product candidate formulations, specifically for AKI, combines a unique proprietary formulation of oxypurinol simultaneously with an existing approved drug for the purpose of rapidly decreasing serum uric acid in hospitalized patients and then maintaining low circulation concentrations of uric acid using the unique proprietary formulation of oxypurinol. Oxypurinol, and our proprietary pipeline-in-a-product strategy supported by our intellectual property, established exclusive manufacturing agreements, and our plan to conduct clinical trials with experienced clinicians, are focused on building a robust pipeline of assets to address the unmet medical needs for patients with ADPKD, AKI due to COVID-19 infection, and T2DN. At this time, we have not developed product candidates to treat diseases beyond ADPKD, AKI due to COVID-19 infection and T2DN.

Our three lead product candidates are XRx-008, a novel product candidate program for the treatment of ADPKD; XRx-101, a product candidate program for the treatment of AKI due to COVID-19; and XRx-225, a product candidate program for the treatment of T2DN. At XORTX Therapeutics, we aim to redefine the treatment of kidney diseases by developing medications to improve the quality-of-life of patients and slow kidney disease progression by modulating aberrant purine metabolism and decreasing elevated uric acid as a therapy.

Overview of our Proprietary Pipeline-In-A-Product

Our expertise and understanding of the pathological effects of aberrant purine metabolism combined, with our understanding of uric acid lowering agent structure and function, has enabled the development of our proprietary pipeline-in-a-product strategy. This is a complementary suite of therapeutic product candidates designed to provide unique solutions for acute and chronic disease, and more specifically, kidney disease. We believe that our product candidates address a unique mechanism of injury and for this reason, in some renal diseases, can be used in a complementary way with existing therapies to develop tailored approaches to help address renal disease indications in multiple body systems through management of chronic or acute hyperuricemia, immune modulation, and metabolic disease. We plan to leverage these product candidates in the future to expand our pipeline of next generation drug-based therapies that we believe could represent significant improvements to the standard of care in kidney disease.

We believe our in-house product candidates' design and formulation capabilities confer significant competitive advantages to our pipeline. Some of these key advantages are:

Highly modular and customizable.

Our pipeline is based upon the use of unique proprietary formulations of oxypurinol with additional excipient ingredients, other uric acid lowering agents, and/or modified with other functional groups to address acute, intermittent or chronic disease progression such as ADPKD, AKI due to COVID-19 infection, and T2DN. For example, our XRx-101 product candidate program for AKI due to COVID-19 infection is designed to produce rapid suppression of hyperuricemia, then maintain purine metabolism. Our XRx-008 product candidate program is designed for longer term stable chronic oral dosing of xanthine oxidase inhibitors. We believe that our experience and capabilities related to formulation technology may allow us to manage the unique challenges of renal disease by modulating aberrant purine metabolism, slowing progression of kidney disease, and decreasing injury due to inflammatory and oxidative state.

Fit-for-purpose.

Our pipeline can also be utilized to engineer new chemical entities and formulations of those agents that have enhanced properties. For example, our XRx-225 product candidate program represents a potential new class of xanthine oxidase inhibitor with a targeted design to enhance anti-inflammatory activity. The capability of tailoring the therapeutic benefit of this potential class of new agents may permit us to identify targets and disease that we wish to exploit and then, through formulation design, optimize those small molecules and proprietary formulations to maximize clinically meaningful therapeutic effect.

Readily scalable and transferable.

Our in-house small molecule and formulations design expertise is positioned to create a steady succession of product candidates that are scalable, efficient to manufacture (by a partner, contract manufacturing organizations or us), and produce high production and high purity active pharmaceutical product candidates. We believe this will provide a significant competitive advantage, new intellectual property, and an opportunity to provide novel uric acid lowering agent indication products that target unmet medical needs and clinically meaningful quality of life.

Our team's expertise in uric acid lowering agents, specifically in the development and use of xanthine oxidase inhibitors, has enabled the development of our therapeutic pipeline to treat the symptoms of, and potentially delay the progression of, ADPKD, AKI due to COVID-19 infection, and T2DN. We do note that there is no guarantee that the FDA will approve our proposed uric acid lowering agent products for the treatment of kidney disease or the health consequences of diabetes.

Product Candidates

Our lead product candidates are XRx-008, XRx-101 and XRx-225, and the ultimate FDA approval for each would be based upon the Prior FDA Review for the allopurinol intolerant gout indication and utilizing the development pathway established in 505(b)(2) of the Federal Food, Drug, and Cosmetic Act. In the future, one option available to XORTX is to use allopurinol as a reference drug under the 505(b)2 development path. However, there is no guarantee that the FDA will ultimately allow the use of the 505(b)(2) developmental pathway, that any trial will be positive, or that the FDA will view the results from any trial to be sufficient to grant marketing approval. XORTX has filed a pre-IND submission for XRx-008 and has received FDA guidance on steps necessary to advance this program through clinical trial and to filing of an NDA. We have filed a pre-IND submission in our XRx-101 program, and the program is preparing for a "bridging" pharmacokinetic study in advance of a planned Phase 3 clinical trial to slow or reverse acute kidney disease in hospitalized individuals infected with COVID-19. The XRx-225 product candidate program is at the non-clinical stage.

XORTX Therapeutics Pipeline:

The interpretation by XORTX based upon FDA discussions is that the 505(b)(2) pathway and right of reference to the former NDA provide XORTX the ability to bypass conducting its own Phase 1 and Phase 2 studies for XRx-008 and XRx-101 programs. However, we may elect to conduct our own Phase 1 and Phase 2 studies as necessary or required to gain marketing approval in the aforementioned programs.

Our Strategy

Our goal is to apply our interdisciplinary expertise and pipeline-in-a-product strategy to further identify, develop and commercialize novel treatments in renal disease and indications related to health consequences associated with diabetes. To achieve this objective, we intend to pursue the following strategies:

1. Submit an NDA to the FDA following the successful completion of the Phase 3 clinical registration trial of the XRx-008 product candidate program in order to establish a new standard of care for ADPKD.

2. Maximize the potential of the XRx-008 product candidate program, if approved, through independent commercialization and through opportunistic collaborations with third parties.

3. Leverage our pipeline-in-a-product strategy, developing additional proprietary formulations leveraging our experience selecting renal indications and complementing our developments through acquisitions or in-licensing opportunities in nephrology and diabetes when opportunities arise.

Background

Uric acid is an essential molecule necessary for excretion of excess nutrients. However, at chronically high levels, serum uric acid (“SUA”) acts through a newly discovered mechanism to cause disease. If untreated, high uric acid levels may eventually lead to permanent bone, joint and tissue damage, kidney disease, such as ADPKD and AKI, and heart disease. Research has also shown a link between high uric acid levels and cardiovascular and renal diseases, hypertension, insulin resistance, type 2 diabetes, high blood pressure, and fatty liver disease. Figure 1 provides a background on the formation and use of uric acid in the body.

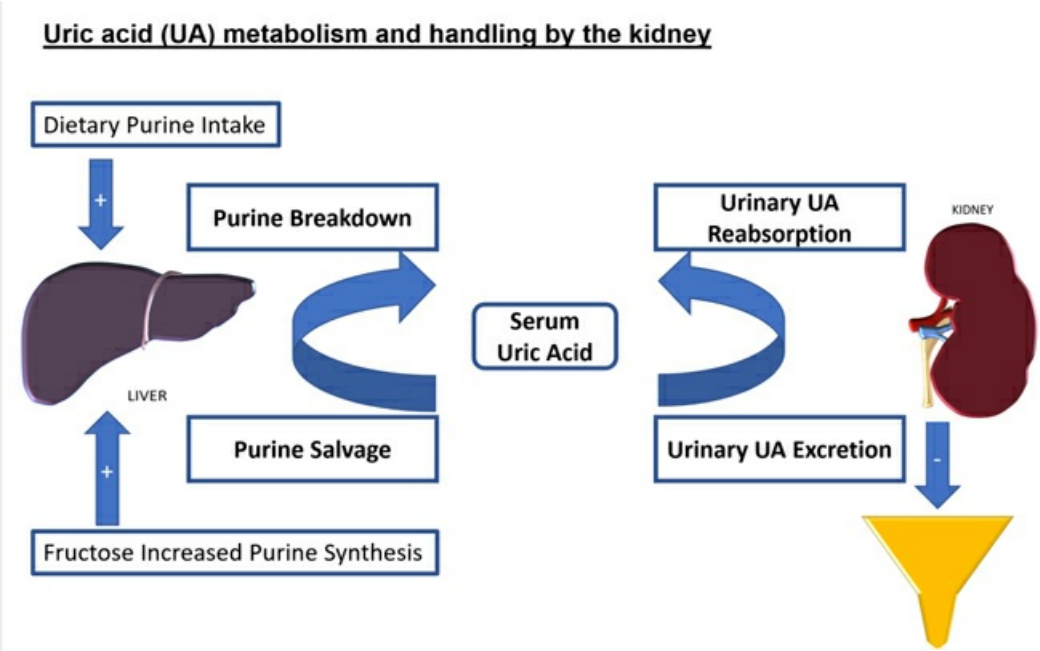

Figure 1: Dietary sources of purines such as yeast, shellfish, organ meats can lead to chronically increased nucleic acids and purines in the circulation. Both are broken down by the liver into uric acid for excretion. Fructose stimulates the liver to produce endogenous purines and can lead to increased serum uric acid. Prior to arrival at the bladder, uric acid can be reabsorbed by the kidney for re-use as a building block for new purine and nucleotide synthesis.

We are focusing on a pipeline-in-a-product strategy with new applications of selected product candidates that treat such diseases and conditions related to high SUA, particularly ADPKD.

ADPKD is caused by mutations from the PKD1 or PKD2 genes, which encode for proteins called polycystin-1 and polycystin-2, respectively. In ADPKD, fluid-filled cysts develop and enlarge in both kidneys, eventually leading to kidney failure. The average size of a typical kidney is a human fist, but polycystic kidneys can get much larger, some growing as large as a football, and can weigh up to 30 pounds each. The onset of ADPKD is often diagnosed at ages between 30 to 50 years. Common symptoms of ADPKD include increased SUA, hypertension, endothelial dysfunction, increased protein in the urine and decreased filtering capacity. ADPKD is a painful disease that impacts quality of life, and nearly 50% of individuals diagnosed with ADPKD progress to end stage renal disease (“ESRD”) by the age of 60. Once a person has ESRD, dialysis or a transplant are the only treatment options. Approximately 5% of all individuals on dialysis are ADPKD patients. As ADPKD progresses, patients and treating physicians currently have limited therapeutic options to slow or halt progression toward ESRD.

ADPKD represents 85% of polycystic kidney disease cases and is amongst the most rapidly progressing form of polycystic kidney disease, and is the most significant genetic cause of kidney failure. In 2014, close to 32,000 patients on long-term renal therapy were attributable to ADPKD, making it the fourth leading cause of new kidney disease cases behind diabetes, hypertension, and glomerulonephritis in the U.S. The estimated 140,000 diagnosed cases of ADPKD in the U.S. includes an annual incidence of approximately 2,500 new patients every year, and we believe a greater number of patients remain undiagnosed. In Europe, ADPKD had a prevalence of approximately 176,000 cases and an incidence of new patients of approximately 2,800 per year. Currently in the U.S. and Europe, an average of 5% to 8% of ADPKD patients are on renal therapy and patients are typically over fifty years old. Continued efforts are underway to better understand the different roles of inflammation, mitochondrial dysfunction and uric acid in the pathophysiology ADPKD. Multiple therapeutic strategies have been attempted to slow progression to renal disease with few successes, thus ADPKD remains a significant unmet medical need. The Polycystic Kidney Disease Foundation defines ADPKD as one of the most common life-threatening genetic diseases.

Even in the absence of kidney disease, increased SUA has been associated with vascular injury and inflammation, increased blood pressure, associated with endothelial dysfunction, increase proteinuria, and initiation of kidney injury. In the setting of ADPKD, high SUA has been reported to be an independent risk factor for greater cyst number, faster cyst growth and so increased total kidney volume as well as increased rate of decline of filtering capacity.

High levels of SUA, or hyperuricemia, can increase high blood pressure, blood vessel injury, endothelial dysfunction and inflammation within the cardiovascular system and specifically the kidney. A third party coordinated and conducted Phase 2 clinical trial pilot studies show that therapy to decrease uric acid in chronic progressing kidney disease can improve endothelial dysfunction, decrease proteinuria and suggest a slowing of the rate of filtering capacity decline in patients.

Data suggests that uric acid may be a major culprit in cardiovascular disease regardless if it is acute, intermittent or chronically increased. Increased SUA is reported to result in injury of the cardiovascular and renal system by acting through intracellular effects and extracellular effects. Increased xanthine oxidase expression is also reported in disease settings and as a mechanism of injury of the kidney. In fact, five types of data attest that high levels of uric acid, even without fully diagnosed kidney disease, is harmful. Firstly, increased endogenous uric acid concentrations correlate with endothelial dysfunction, and when oxypurinol is infused into the human brachial artery endothelial dysfunction is reversed. Secondly, endogenous uric acid concentrations correlate with endothelial dysfunction. Thirdly, population studies show uric acid is an independent predictor of mortality, including one large study in patients with chronic heart failure. Fourthly, SUA is an independent risk factor for kidney disease. Fifthly, acute increases in circulating uric acid due to tumor lysis, crushing trauma and major cardiac surgery has been associated with acute organ injury and specifically AKI. Most recently, SUA has been identified as a risk factor predicting worse AKI outcomes during COVID-19 infection & AKI severity is correlated with mortality.

Current Therapies and Treatments in Development

Critically, patients with hyperuricemia and chronic kidney disease currently have few treatment options.

For the vast majority of patients diagnosed with kidney disease before ESRD, the standard of care is generally to attempt to decrease the amounts of uric acid in the patient. There are three classes of uric acid lowering agents that are generally in use today: xanthine oxidase inhibitors, such as allopurinol and febuxostat; uricosurics; and injectable enzymes. In addition to the approved treatments discussed above, there are multiple therapies currently in late-stage clinical development for the treatment of patients with ADPKD, which include bardoxolone, venglustat, and lixivaptan, GLPG2737, RGLS4326 and NV-20494.

Prior FDA Review of Oxypurinol

Oxypurinol was developed as an alternative therapy to allopurinol in gout patients who were intolerant of allopurinol. In 2003, a third-party company Cardiome Pharma Corp. filed an NDA for the orphan indication of allopurinol intolerant gout. Cardiome announced via a press release dated June 24, 2004 that "it had received an approvable letter for oxypurinol for allopurinol intolerant hyperuricemia." (the "Prior FDA Review"). The press release stated that "prior to final marketing approval, the FDA requires additional clinical and manufacturing data from Cardiome." However, the FDA did not give final marketing approval for oxypurinol.

XORTX Small Molecule Therapeutics

Small molecule therapeutics and biologics have led to improvements in kidney disease patient outcomes compared to more traditional therapies. However, some patients acquire resistance to, become refractory to, or cannot tolerate the increased toxicity of current treatments. Importantly, these treatments often only delay disease progression. As a result, there is a need for new therapies with improved, long-lasting efficacy and reduced toxicity. We believe the future of treatment of kidney diseases will be defined by multifunctional therapeutics specifically designed to act through multiple action mechanisms to enhance efficacy, overcome resistance and minimize side effects. Furthermore, we believe our proprietary small molecule discovery and formulation program innovations and engineering capabilities uniquely enable us to develop the next generation of kidney therapeutics, including new molecular entities with secondary pharmacologic effects, to help address this treatment gap. Our proprietary pipeline-in-a-product strategy uniquely allows us to utilize all of the above approaches in our mission to allow patients to manage and control the negative symptoms and progression of kidney disease.

XORTX Competitive Advantage

We are led by an experienced and dedicated management team whose average experience exceeds 15 years in the pharmaceutical industry, including several leading pharmaceutical companies. Our board of directors includes highly qualified researchers, pharmaceutical senior executives and experts in the fields of drug development, corporate

development and pharmaceutical commercialization. We are supported by a highly regarded network of leading experts within the field of ADPKD, including prominent ADPKD specialists throughout the world, that serve as external advisors and investigators on clinical trials in ADPKD, chronic and acute kidney disease.

Despite a need for new therapies, there have been few new drugs developed for chronic kidney diseases. We believe our proprietary formulation of xanthine oxidase inhibitors, particularly XRx-008, could become a significant treatment option for patients suffering from ADPKD.

In addition, we received an important endorsement from the Polycystic Kidney Disease Foundation, and we are collaborating with the foundation to define the beneficial effects of our therapies in ADPKD patients and potentially in other forms of polycystic kidney disease as well. We believe that there are substantial benefits to working with the leading polycystic kidney disease foundation in the world and that this collaboration on the development of treatments could redefine how physicians treat this disease in the future.

The overall estimated healthcare costs to treat ADPKD patients ranges from US$7.3 billion to US$9.6 billion per year (or US$52,000 to US$68,000 per patient annually). In addition, kidney disease can progress to a stage where it requires dialysis as a treatment, which is estimated to cost patients an average of approximately US$100,000 per year. We expect our product candidates to be significantly more cost-effective for patients being treated for kidney disease, which we believe could give us a significant competitive advantage over existing treatments.

Product Candidate Pipeline

XRx-008

Overview

The XRx-008 program is designed to decrease the chronic injury associated with kidney disease in patients with ADPKD. Common symptoms of ADPKD include increased SUA, hypertension, endothelial dysfunction, increased protein in the urine and decreased filtering capacity. For many ADPKD patients, uric acid levels are increased above the normal range, and in many instances result in the onset of gout. As ADPKD progresses, patients and treating physicians currently have limited therapeutic options to slow or halt progression toward ESRD.

Current treatment of diseases

One of the current established treatments for gout is allopurinol, which is a xanthine oxidase inhibitor used for decreasing production of SUA. More recently, another treatment, oxypurinol, has been developed as an alternative to allopurinol for gout patients who were intolerant of allopurinol. In one study conducted by third party Cardiome Pharma Corp., approximately 70% of these individuals were able to tolerate oxypurinol well and nearly all of those individuals gained clinically meaningful benefit for their gout using this xanthine oxidase inhibitor instead of allopurinol.

Potential Advantages of XRx-008

XRx-008, under our granted formulation patent, is a product candidate intended to be administered once daily to decrease uric acid production by xanthine oxidase, thereby decreasing chronic injury associated with progressing kidney disease in patient with ADPKD. Decreasing the production of uric acid is expected to decrease systemic and kidney inflammation, decrease the rate of initiation of cyst genesis and cyst growth, reverse endothelial dysfunction, decrease proteinuria, and decrease the rate of decline of kidney filtering capacity, all to the benefit of patients with ADPKD.

We believe our proprietary formulation of xanthine oxidase inhibitor, XRx-008, could become a significant treatment option for patients suffering from ADPKD. We believe XRx-008 can increase the bioavailability of oxypurinol. So far, based upon the results of publicly available third-party clinical trials, over 600 patients have been treated clinically with oxypurinol, and results have shown that the rate of rash and liver enzyme elevation is substantially reduced, suggesting that oxypurinol is superior in terms of tolerability to allopurinol. The XRx-008 product includes the addition of L-Arginine as bioavailability enhancer and has a demonstrated nephron-protective effect. Therefore, our patented formulation of oxypurinol is expected to provide an additional benefit compared to allopurinol alone. A therapeutic intervention to reduce uric acid could provide a treatment modality that ultimately reduces inflammation and modifies the underlying disease pathology. There have been no adverse events reported that are unique to oxypurinol. Importantly, in this group of over 600 patients exposed to oxypurinol, no serious adverse events related to Stevens-Johnson Syndrome have been reported.

Clinical experience with oxypurinol is extensive and it has been administered in clinical studies to patient with gout, endothelial dysfunction, and congestive heart failure. Results of those clinical trials and other clinical and non-clinical results suggest that hyperuricemia may play a pathological role in obesity, hypertension, metabolic syndrome, polycystic kidney disease, sepsis, heart disease and other disease, as yet not rigorously tested in clinical trials. Patients with congestive heart failure, hypertension are often simultaneously treated with a number of drugs plus allopurinol. Although an evaluation has not been done yet, if XRx-008 is approved and launched commercially for patients with ADPKD, we believe that it could fit well in combination with other pulmonary and cardiovascular products. For example, Otsuka's current cardiovascular and renal portfolio includes Entresto, Jynarque, and Samsca. While XRx-008 has not been clinically evaluated in combination with other product candidates, the physicians prescribing these Otsuka products could overlap significantly with the physicians expected to prescribe XRx-008 upon its approval.

Anticipated clinical development of XRx-008

Oxypurinol, a significant part of the XRx-008 product candidate, is not yet approved for marketing anywhere in the world, though it was previously reviewed by the FDA between 2003 and 2005 as sponsored by a third-party, Cardiome Pharma Corp but it did not receive final FDA marketing approval. We have not conducted any clinical trials to date. We plan to rely on the prior research conducted and published in peer-reviewed journals and the Prior FDA Review for the FDA approval of XRx-008 as well as study results sponsored by XORTX. We have submitted a Pre-IND submission to the FDA for XRx-008. While we have not conducted any clinical trials for the product candidate, we believe XRx-008 may utilize the FDA 505(b)(2) developmental pathway supporting a reformulation of oxypurinol with increased bioavailability and superior tolerability compared to allopurinol. We are pursuing a regulatory pathway pursuant to Section 505(b)(2) of the FDCA and plan to pursue the hybrid application of the EU Centralized Procedure pursuant to article 10(3) of Directive 2001/83/EC, for the approval of this product candidate.

Based upon this strategy, the XRx-008 program is preparing for a bridging pharmacokinetic study to describe the bioavailability of the unique proprietary formulation and characterize the oral dosing for the Company's Phase 3 clinical trial to slow or reverse progression of kidney disease in subjects with ADPKD. Preparations for the bridging study include the development of protocol synopses. However, lead investigators and FDA input will be required for final protocol details. At this time, we are presently in the process of evaluating and selecting a contract research organization. The bridging study will characterize the bioavailablity and pharmacokinetics of oxypurinol formulation candidates for Phase 3 clinical testing. The Phase 3 registration trial's primary endpoint will characterize the benefit of uric acid lowering over a two year period on the rate of glomerular filtration rate decline. Secondary endpoints, will include change from total kidney volume, proteinuria, inflammatory markers.

XRx-101

Overview

Our second program, XRx-101, is being developed for the treatment of AKI in COVID-19 patients. Approximately 7.5% individuals with COVID-19 infection are hospitalized. In our study with the Icahn School of Medicine in the second half of 2020, we found that among patients hospitalized with COVID-19, 36% had AKI at the time of admission and an additional 23% developed AKI during hospitalization. Many of these individuals have SUA over 7.5 mg/dL - a concentration of SUA associated with saturation of the circulatory system, crystal formation, and acute organ injury. Uric acid crystal formation in the blood has been associated with AKI in the setting of tumor lysis after major cardiac surgery and crushing trauma. In this setting, efforts to rapidly decrease SUA concentrations have shown promise for decreasing acute injury and improve prognosis. When uric acid crystals form in the blood, acute injury to blood vessel, lungs, kidneys and heart has been described in literature. Strategically, for hospitalized patients with COVID-19 infection and evidence of high uric acid accompanied by evidence of AKI, rapidly decreasing SUA concentration may represent an important treatment to protect kidneys and other organ function.

Since over 25% of people infected with COVID-19 also had diabetes as co-morbidity, we believe that it is plausible that uric acid is also elevated in these individuals prior to infection and that XRx-101 could potentially

become a valid treatment for this patient group. Elevated uric acid is highly correlated with inflammation which has been the primary diagnostic among all the more infected people with the virus which then leads to a worsen clinical outcome. Studies have shown a strong association between elevated IL-6 and Creatinine Reactive Protein ("CRP") inflammation markers and worsening outcomes leading to the Intensive Care or death. A recent study by Jamie Hirsh, et al., titled *Acute kidney injury in patients hospitalized with COVID-19* (Clinical Investigation 2020; 98: 209), analyzed health records of 5,449 hospitalized patients, and showed that 36.6% developed AKI. Among those patients with AKI, 35% died, 26% were discharged and 39% were still hospitalized as of the publishing of the Hirsh's report. In March 2021, a group of nephrologists and scientists from Yale published a peer-reviewed paper at JAMA, titled *Assessment of Acute Kidney Injury and Longitudinal Kidney Function After Hospital Discharge Among Patients With and Without COVID-19* (JAMA Netw Open. 2021;4(3):e211095), showing that in a cohort study of 1,612 patients with AKI monitored after their index hospitalization, estimated glomerular filtration rate declined by 11.3 mL/min/1.73 m2 per year faster in patients with COVID-19–associated AKI compared with patients with AKI not associated with COVID-19. This finding persisted after adjusting for patient's baseline comorbidities and severity of AKI.

Current treatment of diseases

Currently only one drug, Remdesvir, has been approved by the FDA for treatment of COVID-19 infections. Additional drugs, such as REGN-COV2, bamlanivimab, bamlanivimab in combination with etesevimab, convalescent plasma, and baricitinib, have been authorized for COVID-19 treatment under the FDA Emergency Use Authorization ("EUA"), and further drugs, such as dexamethasone and tocilizumab, have been approved under the National Institute of Health Guidance. There are currently no approved drugs to treat patients with COVID-19 who are at high risk of kidney failure.

Potential Advantages of XRx-101

XRx-101 is a therapeutic treatment to protect kidneys from AKI that may occur due to COVID-19 in patients hospitalized and treated in intensive care units ("ICU"). The XRx-101 product candidate is a combination of two uric acid lowering agents in a unique treatment regimen that will target both rapid and sustained uric acid lowering to protect kidney another organ systems from acute injury during hospitalization for COVID infection. The aim of XRx-101 is to treat hospitalized patients early, decrease high SUA concentrations at or early after hospitalization and minimize AKI. We believe this could be a unique opportunity since currently no drugs are approved for AKI, and we believe XRx-101 will be the first product candidate intended to treat patients with COVID-19 who are at high risk of kidney failure.

Anticipated clinical development of XRx-101

While oxypurinol has not received final FDA marketing approval, as the XRx-101 product candidate includes oxypurinol, we plan to rely on the prior research conducted and published in peer-reviewed journals and that in the Prior FDA Review, as well as study results to be sponsored by XORTX for the product candidate's FDA approval. We are pursuing a regulatory pathway approval of XRx-101 pursuant to Section 505(b)(2) of the FDCA, and are also considering pursuing approval via the hybrid application of the EU Centralized Procedure pursuant to article 10(3) of Directive 2001/83/EC.

In previous studies, oxypurinol has clinically demonstrated the ability to inhibit the breakdown of purine and pyrimidine nucleotides to uric acid, decreasing the production of tissue uric acid and SUA from reaching saturation and crystal formation in the circulation and specifically kidneys.

The XRx-101 clinical development program will target and characterize the kidney protective effects of this novel therapy and initiate a clinical trial within the next 12 months. Two key third-party studies, one in a mouse model of influenza and another in herpes infection, have shown that allopurinol can act as an anti-viral, lower uric acid, and also protect organs. In the setting of serious viral infection and acute tissue damage, XRx-101 can act to inhibit xanthine oxidase expression due to hypoxia or tissue destruction, therefore preventing increased SUA concentration from reaching saturation levels at which uric acid crystals could trigger an AKI. Most importantly, we believe that excipients in the formulation such as L-arginine, a basic amino acid and nitric oxide source, can increase the aqueous solubility of uric acid thereby also decreasing crystal formation associated with tumor lysis-like syndrome due to COVID-19 infections. L-arginine has been shown to protect against kidney injury in the setting of ischemia reperfusion injury.

While we have not conducted any clinical trials to date, we are in the planning stages for the Phase 3 trial of XRx-101 at this time and have developed protocol synopses. However, lead investigators and FDA input will be required for final protocol details. The company is in the process of evaluating and selecting a contract research organization. We expect our Phase 3 pivotal clinical trial will further demonstrate that XRx-101 could attenuate AKI in the setting of COVID-19 infection.

On October 8, 2020, we announced that we received a positive response from the FDA regarding our submission of a COVID-19 infection pre-investigational new drug ("pre-IND") meeting package, providing the Company with a clear development path forward for XRx-101. Our submission to the FDA summarized current data supporting the XRx-101 program. At the same time the FDA response provided clear feedback on the proposed plan and outlined the critical steps to test XRx-101 in patients with COVID-19 infection to treat AKI in a Phase 3 trial. To support preparation of the Phase 3 trial, we are preparing for a pharmacokinetic study to describe the bioavailability of this unique proprietary formulation of xanthine oxidase inhibitor and characterize the oral dosing for our Phase 3 clinical trial to slow or reverse acute kidney disease in hospitalized individuals with COVID-19. Similarly, rapid decreased SUA concentration followed by sustained xanthine oxidase inhibition has the potential to improve cardiovascular and neurological outcomes as well. We believe a number of completed clinical studies support regulatory filing of the XRx-101 program by XORTX.

XRx-225

Overview

T2DN is a kidney disease that affects individuals with diabetes. The number of individuals with diabetes is rising. An epidemiologic study published by Wild et al., titled Global Prevalence of Diabetes (Diabeters Care; Vol. 27, No. 5, May 2004), studied and estimated the number of individuals with diabetes in the year 2000 and 2030. The total number of adults 20 years of age or older with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030. The number of individuals with diabetes who develop diabetic kidney disease is established to be between 30 and 40%. More recently, studies have predicted that "the global diabetes prevalence in 2019 is estimated to be 9.3% (463 million people) rising to 10.2% (578 million) by 2030 and 10.9% (700 million) by 2045". Interpreted together these reports suggest an oncoming crisis of chronic kidney disease associated with rising numbers of individuals with diabetes.

T2DN affects the kidneys' ability to do their usual work of removing waste products and extra fluid from the body. T2DN is a large unmet medical disease. Diabetic nephropathy affects approximately 12 million US citizens and an estimated 170 million individuals worldwide. Approximately half of all chronic kidney disease and kidney failure has been attributed to diabetic complications. Diabetic kidney disease is associated with high blood pressure, insulin resistance, high uric acid levels, proteinuria, cardiovascular disease and decreasing filtering capacity of kidneys. Similarly, high SUA concentration has been reported to be an independent risk factor for progressing kidney disease in these patients, and is associated with increased blood pressure, systemic inflammation, cardiovascular injury, endothelial dysfunction and progressing kidney disease.

Over many years, diabetes in some individuals slowly damages the kidneys' filtering system, and can progress to kidney failure. ESRD, which occurs when kidneys are no longer capable of filtering blood to remove metabolic waste products and uric acid, is the final stage of chronic kidney disease, and can be fatal. At that stage, the treatment options are either dialysis (the mechanical filtering of blood), or a kidney transplant.

Current treatment of diseases

Major therapeutic interventions to treat T2DN include near-normal blood glucose control, antihypertensive treatment, and restriction of dietary proteins. Drug classes employed include hormones (such as insulin), sulfonylureas, biguanides, angiotensin-converting enzyme inhibitors, angiotensin receptor blockers, beta-adrenergic blocking agents, calcium channel blockers, and diuretics. However, many of the treatments above might not be effective in some patients with diabetes.

Potential Advantages of XRx-225

Recently we reported that lowering uric acid in individuals with T2DN could decrease proteinuria to a substantial and significant degree, even in patients treated with the current standard of care. This finding is in agreement with other clinical trial reports of improved proteinuria, decreased creatinine, and decreased filtration rate of decline when uric acid is therapeutically decreased. Conceptually, lowering uric acid toward or into the normal range in T2DN would decrease harmful risk factors for kidney disease progression that may include decreased blood pressure, decreased endothelial dysfunction, decreased proteinuria, decreased inflammation and enhanced blood flow to the kidney.

Anticipated clinical development of XRx-225

XRx-225 is in non-clinical development stages, and we have not conducted any clinical trials to date. XORTX is in the process of manufacturing XRx-225 in preparation for non-clinical pharmacology, toxicology, and pharmacokinetic animal testing, and then contemplates advancing to Phase 1 clinical testing, and thereafter further clinical development. As the XRx-225 product candidate provides oxypurinol, we may plan to rely on the prior research conducted and published in peer-reviewed journals and that in the Prior FDA Review, as well as study results to be sponsored by Xortx for the product candidate's FDA approval.

Strategic Partnerships and Collaborations

On April 30, 2020, we announced the appointment of LONZA Group as manufacturer of GMP oxypurinol for the XRx-008 and XRx-101 programs. The launch of oxypurinol manufacturing for both programs is the first step to advance toward clinical testing. Lonza is a leading global provider of integrated healthcare solutions. Securing the manufacturing of oxypurinol and formulation in preparation for a bioequivalence study and the submission of the Investigational New Drug ("IND") package with the FDA are the main priorities to enable the pivotal Phase 3 clinical trial.

On August 4, 2020, we announced a partnership with the Icahn School of Medicine at Mount Sinai, New York to study the incidence of AKI and hyperuricemia in patients hospitalized with COVID-19. This clinical study in more than 5,600 patients with COVID-19 builds upon unpublished observations from over 1,100 individuals, where greater than 60% of individuals with AKI had elevated uric acid levels above the normal range. This partnership is an investigator-led study focused on evaluation of the more than 5,600 individuals with COVID-19 infection. Dr. Steven Coca, lead investigator and Associate Professor of Medicine at the Icahn School of Medicine at Mount Sinai observed a hypercatabolic phenotype in a significant proportion of patients with AKI, manifested by extremely high serum uric acid levels, along with hyperkalemia and hyperphosphatemia without overt evidence of rhabdomyolysis. A better understanding of the pathophysiologic causes of COVID-associated AKI is needed, including the potential effect of hyperuricemia on the severity of kidney injury and contribution to poor outcomes. The company is advancing this investigator-led clinical study with Drs. Steven Coca and Jaime Uribarri and several other clinicians and investigators at the Icahn School of Medicine at Mount Sinai. This group is one of the leading medical networks in the world and the ability to expand on observations that hospitalized individuals with COVID-19 have very high uric acid level will provide clarity on the association of xanthine oxidase and uric acid AKI and multi-organ injury with infection.

Intellectual Property

Our business success will depend significantly on our ability to:

- secure, maintain and enforce patent and other proprietary protection for our core technologies, inventions and know-how;
- obtain and maintain licenses to key third-party intellectual property owned by such third parties;
- preserve the confidentiality of our trade secrets; and
- operate without infringing upon valid, enforceable third-party patents and other rights.

We seek to secure and maintain patent protection for the composition of matter, manufacturing processes and methods of use for our product candidates. We also utilize trade secrets, careful monitoring and limited disclosure of

our proprietary information where patent protection is not appropriate. We also protect our proprietary information by ensuring that our employees, consultants, contractors and other advisors execute agreements requiring non-disclosure and assignment of inventions prior to their engagement. We will continue to expand our intellectual property holdings by seeking patent protection for new compositions of matter, new features and applications of our core therapeutic platforms, and innovative new therapeutic platforms, in the United States and other jurisdictions. We will also supplement internal innovation through in-licensing of new technologies and compositions of matter as appropriate. We intend to take advantage of any available data exclusivity, market exclusivity, patent term adjustment and patent term extensions.

We routinely monitor the status of existing and emerging intellectual property disclosed by third parties that may impact our business, and to the extent we identify any such disclosures, by evaluating them and taking appropriate courses of action.

As of August 10, 2021, our patent portfolio includes XORTX-owned and licensed patents and patent applications for five different active patent families.

Patent Family No.	Patent Family Name	XRx-101	XRx-008	XRx-225	Additional Potential Candidates
1	Xanthine Oxidase Inhibitor Formulation Patents - Kidney, Cardiovascular, Neurological	X	X	X	Other indications such as rare kidney diseases, cardiovascular and neurological diseases
2	Virus, Coronavirus, Sepsis Health Consequences - Viral Induced Acute Organ, Kidney Injury	X			Generally applicable to viral infections, including respiratory and health consequences.
3	Methods of Enhancing Anti-Viral Therapies - Viral and Bacterial Infection	X			Generally applicable to Viral infections, including respiratory and health consequences
4	Compositions and Methods for Treatment and Prevention of Insulin Resistance			X	
5	Uric Acid Lowering Agents for Metabolic Syndrome (Treatment of Diabetic Nephropathy)			X	

Patent Family Member No. 1 is XORTX-owned and includes pending U.S. patent application and a granted European patent with the validation state selection in progress. Patent Family Member No. 2 is XORTX-owned includes a pending Patent Cooperation Treaty, or PCT, application. XORTX-owned Patent Family Member No. 3 includes a pending U.S. provisional patent application. These three families relate to our key product candidates and programs including XRx-101, XRx-008 and XRx-225 and our therapeutic platform technology, described elsewhere in this prospectus, and also for additional potential product candidates. Patent Family Member No. 4 includes an issued U.S. patent for which XORTX is the licensee. Patent Family Member No. 5 includes an issued U.S. patent and a pending European patent application, each of which XORTX is the licensee.

The XORTX owned and licensed patent family members include claims to cover AKI, and other acute organ injury due to COVID19 infection - a program which could ultimately be expanded to a larger patient population with unmet medical needs including other viral and sepsis patients. The value of patents for reformulation or repurposed drugs is additive as is the case of orphan programs given that FDA grant of orphan drug status would provide the Company with a seven-year marketing exclusivity in the U.S. which would be more than adequate to generate acceptable rewards, given the premium pricing environment available to rare disease opportunities. Notably, this exclusivity is 10 years in Europe and Japan.

XORTX neither owns or licenses oxypurinol, our technology is based upon proprietary formulations of oxypurinol that improve oral bioavailability.

Technology Licensing and In-Licensed Intellectual Property

We identify and selectively enter into technology licensing agreements and intellectual property in-licensing agreements to support pipeline advancement.

The Company has licensed intellectual property from various third parties as described below after giving effect to the Proposed Share Consolidation:

In December 2012, the Company entered into an agreement (the "Vendors Agreement") between the Company and Dr. Richard Johnson and Dr. Takahiko Nakagawa (the "Vendors") to license, and subject to certain conditions thereunder, to purchase, certain intellectual property relating to the use of all uric acid lowering agents to improve the treatment of metabolic syndrome. Under the Vendors Agreement, the Company issued 102,215 common shares.

a) The Company also had the option to pay the Vendors an additional US$75,000 to purchase the patents which was set up as a provision in the year ended December 31, 2018. (Note 9)

   During the year ended December 31, 2020, the Company determined that it was no longer feasible to complete the purchase and as such, indicators of impairment existed leading to a test of recoverable amount of the license, which resulted in an impairment loss of $64,562. As this valuation technique requires management's judgement and estimates of the recoverable amount, it is classified within level 3 of the fair value hierarchy.

   The Company will pay the Vendors a royalty, at a rate in the low single digits, based on the cumulative net revenues from the sale or sublicense of the product covered under the licensed intellectual property until the later of (i) the expiration of the last patent right covering the product and (ii) the expiration of 10 years from the date of the first commercial sales of a product. The royalty rate increases to the mid-single digits in the event that our research and development expenditures decrease below 15%.

   Some of the patents used in our XRx-225 product candidate are licensed by the Company under the terms of this license agreement.

b) Pursuant to an amended and restated license agreement (the "UFRF License Agreement") dated June 23, 2014, between the Company and the University of Florida Research Foundation, Inc. ("UFRF"), the Company acquired the exclusive license to the certain intellectual property related to the use of all uric acid lowering agents to treat insulin resistance. The Company has paid or is obligated to pay UFRF the following consideration:

   i) an annual license fee of US$1,000 (2020 fees– paid);

   ii) reimburse UFRF for United States and/or foreign costs associated with the maintenance of the licensed patents;

   iii) the issuance or agreement to issue to UFRF of 51,423 shares of common stock of the Company;

   iv) milestone payments of US$500,000 upon receipt of FDA approval to market licensed product in the United States of America and US$100,000 upon receipt of regulatory approval to market each licensed product in each of other jurisdictions;

   v) royalty payments of up to 1.5% of net sales of products covered by the license until the later of (i) the expiration of any patent claims or (ii) 10 years from the date of the first commercial sale of any covered product in each country. Following commencement of commercial sales, the Company will be subject to certain annual minimum royalty payments that will increase annually up to a maximum of US$100,000 per year; and

   vi) UFRF is entitled to receive a royalty of 5% of amounts received from any sub-licensee that are not based directly on product sales, excluding payments received for research and development or purchases of the Company's securities at not less than fair market value.

   UFRF may terminate the UFRF License Agreement if the Company fails to meet the following specified outstanding milestones:

   - in the event that the first sale to a retail customer does not occur on or before January 30th, 2025;

   - in the event that we do not target submission of an NDA with the FDA or other foreign regulatory agency for approval to market an indication in the insulin resistance, diabetes, or improved thiazide – uric acid lowering agent product group by December, 2023; and

- in the event we do not have the first sale of a licensed product by January 2025.

Some of the patents used in our XRx-225 product candidate are licensed by the Company under the terms of this license agreement.

Manufacturing

We rely on third party contract manufacturing organizations to provide manufacturing for our product candidate for our non-clinical and clinical studies. To retain focus on our expertise in developing new product candidates, we do not currently plan to develop or operate in-house manufacturing capacity. Our manufacturing candidates require standard manufacturing and chemistry manufacturing and control, or CMC, processes typical of those required for similar drug manufacturing. We therefore expect to continue to be able to develop product candidates that can be manufactured in a cost-effective fashion by our network of well-validated third party contract manufacturing organizations.

Through our contract manufacturing organizations, we are currently manufacturing a sufficient supply of our product candidates to carry out ongoing and planned preclinical and clinical studies. We plan to identify redundant suppliers and manufacturing prior to submission to the FDA.

Competition

The small molecule therapeutics industry is characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary products. While we believe that our technology, knowledge, experience and scientific resources provide us with competitive advantages, we face potential competition from many different sources, including major pharmaceutical, specialty pharmaceutical and biotechnology companies, academic institutions and governmental agencies and public and private research institutions. Any product candidates that we successfully develop and commercialize will compete with existing therapies and new therapies that may become available in the future.

With respect to target discovery activities, competitors and other third parties, including academic and clinical researchers, may be able to access rare families and identify targets before we do.

Many of the companies against which we are competing or against which we may compete in the future have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved products than we do. Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaboration arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites, recruiting patients for clinical trials, and by acquiring technologies complementary to, or necessary for, our programs.

The key competitive factors affecting the success of all of our product candidates, if approved, are likely to be their efficacy, safety, convenience and price, the effectiveness of alternative products, the level of competition and the availability of coverage and adequate reimbursement from government and other third party payors.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products or therapies that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than any product candidates that we may develop. Our competitors also may obtain FDA, EMA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market. In addition, our ability to compete may be affected in many cases by insurers or other third party payors seeking to encourage the use of generic products.

Our product candidates will compete with the therapies and currently marketed drugs discussed below.

- *XRx-008*: XRx-008 is intended to treat patients with ADPKD. Currently, the only FDA approved ADPKD-targeted therapy is tolvaptan, which is marketed as Jynarque from Otsuka Pharmaceuticals Co., Ltd.

- *XRx-101*: XRx-101 is intended to treat patients AKI due to COVID-19 infection. Currently, only one drug, Remdesvir, has been approved by the FDA for treatment of COVID-19.

Additional drugs REGN-COV2, bamlanivimab, bamlanivimab combined with etesevimab, convaslescent plasma, and baricitinib, have been authorized for COVID-19 treatment under the FDA EUA, and further drugs, such as dexamethasone and tocilizumab, have been approved under the National Institute of Health Guidance.

- *XRx-225*: XRx-225 is intended to treat patients with T2DN. Currently approved therapeutic interventions to treat T2DN include near-normal blood glucose control, antihypertensive treatment, and restriction of dietary proteins.

The FDA and corresponding regulatory authorities will ultimately review our clinical results and determine whether our product candidates are effective. No regulatory agency has made any such determination that any of our product candidates are effective for use by the general public for any indication.

Government Regulation

Government authorities in the United States, at the federal, state and local level, and in other countries extensively regulate, among other things, the research, development, testing, manufacturing, quality control, approval, labeling, packaging, storage, record-keeping, promotion, advertising, distribution, post-approval monitoring and reporting, marketing and export and import of pharmaceutical products such as those we are developing. Our therapeutic candidates must be approved by the FDA through the New Drug Applications, or NDA, process before they may be legally marketed in the United States and will be subject to similar requirements in other countries prior to marketing in those countries. The process of obtaining regulatory approvals in the U.S. and in foreign countries and jurisdictions, and the subsequent compliance with applicable federal, state, local and foreign statutes and regulations, requires the expenditure of substantial time and financial resources.

U.S. Small Molecule Drug Product Development Process

In the United States, pharmaceutical products are subject to extensive regulation by the U.S. Food and Drug Administration, or FDA, pursuant to the Federal Food, Drug, and Cosmetic Act, (the "FDCA"). Failure to comply with applicable U.S. requirements may subject a company to a variety of administrative or judicial sanctions, such as FDA refusal to approve pending NDAs, warning letters, voluntary product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, civil penalties, and criminal prosecution.

The process required by the FDA before a small molecule drug product may be marketed in the United States generally involves the following:

- completion of nonclinical laboratory tests, animal studies and formulation studies conducted according to good laboratory practices (GLPs) and other applicable regulations;
- submission to the FDA of an IND application, which must become effective before human clinical trials may begin;
- performance of adequate and well-controlled human clinical trials according to good clinical practices, ("GCPs"), to establish the safety and efficacy of the proposed product for its intended use;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities where the product is produced to assess readiness for commercial manufacturing and conformance to the manufacturing-related elements of the application, to conduct a data integrity audit, and to assess compliance with current Good Manufacturing Practices, ("cGMP") to assure that the facilities, methods and controls are adequate to preserve the product's identity, strength, quality and purity; and
- FDA review and approval of the NDA.

Once a pharmaceutical candidate is identified for development, the product candidate enters the preclinical testing stage. Preclinical tests, also referred to as nonclinical studies, include laboratory evaluations of product chemistry, toxicity and formulation, as well as animal studies to assess the potential safety and activity of the product candidate. The conduct of the preclinical tests must comply with federal regulations and requirements including GLPs.

The IND sponsor must submit the results of the preclinical tests, together with manufacturing information and analytical data to the FDA as part of the IND. Some nonclinical testing may continue even after the IND is submitted. In addition to including the results of the nonclinical studies, the IND will also include a protocol detailing, among

other things, the objectives of the clinical trial, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated if the first phase lends itself to an efficacy determination. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA places the clinical study on a clinical hold within that 30-day time period. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. The FDA may also impose clinical holds at any time during the life of an IND, due to safety concerns or non-compliance, and a clinical hold may affect one or more specific studies or all studies conducted under the IND. If the FDA imposes a clinical hold, trials may not recommence without FDA authorization and then only under terms authorized by the FDA.

Clinical trials involve the administration of the product candidate to healthy volunteers or patients under the supervision of qualified investigators, generally physicians not employed by or under the study sponsor's control. Clinical trials are conducted under protocols detailing, among other things, the objectives of the clinical study, dosing procedures, subject selection and exclusion criteria, and the parameters to be used to monitor subject safety, including stopping rules that assure a clinical study will be stopped if certain adverse events should occur. Each protocol and any amendments to the protocol must be submitted to the FDA as part of the IND. Clinical trials must be conducted and monitored in accordance with the FDA's GCP requirements, including the requirement that all research subjects provide informed consent to participate in the clinical study. Further, each clinical study must be reviewed and approved by an independent institutional review board, (an "IRB"), at or servicing each institution at which the clinical study will be conducted. An IRB is charged with protecting the welfare and rights of study participants and considers such items as whether the risks to individuals participating in the clinical trials are minimized and are reasonable in relation to anticipated benefits. The IRB also approves the form and content of the informed consent that must be signed by each clinical study subject or his or her legal representative. The IRB must monitor the clinical study until completed.

Human clinical trials are typically conducted in three sequential phases that may overlap or be combined:

- Phase 1. The product candidate is initially introduced into healthy human volunteers and tested for safety. In the case of some products for severe or life-threatening diseases, especially when the product may be too inherently toxic to ethically administer to healthy volunteers, the initial human testing is often conducted in patients.

- Phase 2. The product candidate is evaluated in a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance, optimal dosage and dosing schedule.

- Phase 3. Clinical trials are undertaken to further evaluate dosage, clinical efficacy, potency, and safety in an expanded patient population at geographically dispersed clinical study sites. These clinical trials are intended to establish the overall risk/benefit ratio of the product and provide an adequate basis for product labelling.

Post-approval clinical trials, sometimes referred to as Phase 4 clinical trials, may be conducted after initial marketing approval. In certain instances, FDA may mandate the performance of Phase 4 clinical trials. These clinical trials are used to gain additional experience from the treatment of patients in the intended therapeutic indication, particularly for long-term safety follow-up. The results of Phase 4 clinical trials can confirm the effectiveness of a product candidate and can provide important safety information. Conversely, the results of Phase 4 clinical trials can raise new safety or effectiveness issues that were not apparent during the original review of the product, which may result in product restrictions or even withdrawal of product approval.

During all phases of clinical development, regulatory agencies require extensive monitoring and auditing of all clinical activities, clinical data, and clinical study investigators. Annual progress reports detailing the results of the clinical trials must be submitted to the FDA. Written IND safety reports must be promptly submitted to the FDA and the investigators for serious and unexpected adverse events, any findings from other trials, tests in laboratory animals or in vitro testing that suggest a significant risk for human subjects, or any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. The sponsor must submit an IND safety report within 15 calendar days after the sponsor determines that the information qualifies for reporting. The sponsor also must notify the FDA of any unexpected fatal or life-threatening suspected adverse reaction within seven calendar days after the sponsor's initial receipt of the information. Human clinical trials are inherently uncertain and Phase 1, Phase 2 and Phase 3 testing may not be successfully completed. The FDA or the sponsor or its data safety monitoring board may suspend a clinical study at any time on various grounds, including

a finding that the research subjects or patients are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical study at its institution if the clinical study is not being conducted in accordance with the IRB's requirements or if the product candidate has been associated with unexpected serious harm to patients.

There are also requirements governing the reporting of ongoing clinical trials and completed clinical trial results to public registries. Sponsors of clinical trials of certain FDA-regulated products are required to register and disclose certain clinical trial information on a public registry maintained by the U.S. National Institutes of Health (the "NIH"), which is publicly available at www.clinicaltrials.gov. Information related to the product, patient population, phase of investigation, study sites and investigators, and other aspects of the clinical trial is then made public as part of the registration. Although sponsors are also obligated to discuss the results of their clinical trials after completion, disclosure of the results of these trials may be delayed in some cases for up to two years after the date of completion of the trial. Failure to timely register a covered clinical study or to submit study results as provided for in the law can give rise to civil monetary penalties and also prevent the non-compliant party from receiving future grant funds from the federal government. The NIH's Final Rule on ClinicalTrials.gov registration and reporting requirements became effective in 2017, and both NIH and FDA have signalled the government's willingness to begin enforcing those requirements against non-compliant clinical trial sponsors.

Concurrent with clinical trials, companies usually complete additional animal trials and must also develop additional information about the physical characteristics of the product candidate as well as finalize a process for manufacturing the product in commercial quantities in accordance with GMP requirements. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, the sponsor must develop methods for testing the identity, strength, quality, potency and purity of the final product. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the product candidate does not undergo unacceptable deterioration over its shelf life.

U.S. Review and Approval Process

Assuming successful completion of the required clinical testing, the results of the preclinical studies and clinical trials, along with detailed descriptions of the product's chemistry, manufacturing, and controls, proposed labeling and other relevant information are submitted to the FDA as part of an NDA requesting approval to market the product. The cost of preparing and submitting an NDA is substantial. Under federal law, the submission of most NDAs is additionally subject to a substantial application user fee, currently over US$2.8 million for an NDA with clinical information. The manufacturer and/or sponsor under an approved NDA must also pay an annual program fee, currently over US$330,000. These fees are typically increased annually. Fee waivers or reductions are available in certain circumstances.

Section 505(b)(1) and Section 505(b)(2) of the FDCA are the provisions governing the type of NDAs that may be submitted under the FDCA. Section 505(b)(1) is the traditional pathway for new chemical entities when no other new drug containing the same active pharmaceutical ingredient or active moiety, which is the molecule or ion responsible for the action of the drug substance, has been approved by the FDA. As an alternate pathway to FDA approval for new or improved formulations of previously approved products, a company may file a Section 505(b)(2) NDA. Section 505(b)(2) permits the submission of an NDA where at least some of the information required for approval comes from studies not conducted by or for the applicant and for which the applicant has not obtained a right of reference.

The FDA has 60 days from its receipt of an NDA to determine whether the application will be accepted for filing based on the agency's threshold determination that it is sufficiently complete to permit substantive review. Once the submission is accepted for filing, the FDA begins an in-depth review. The FDA has agreed to certain performance goals in the review of NDAs. The FDA seeks to review applications for standard review drug products within ten months, and applications for priority review drugs within six months. Priority review can be applied to drugs intended to treat a serious condition and that the FDA determines offer major advances in treatment, or provide a treatment where no adequate therapy exists. The review process for both standard and priority reviews may be extended by FDA for three additional months to consider additional, late-submitted information, or information intended to clarify information already provided in the submission in response to FDA review questions.

As part of the NDA review process, the FDA likely will re-analyze the clinical trial data, which could result in extensive discussions between the FDA and the applicant. The FDA may also refer applications for novel drug products, or drug products that present difficult questions of safety or efficacy, to an external advisory committee, which is typically a panel that includes clinicians and other experts, for review, evaluation, and a recommendation as to

whether the application should be approved. The FDA is not bound by the recommendation of an advisory committee, but it generally follows such recommendations. Before approving an NDA, the FDA will typically inspect one or more clinical sites to assure compliance with GCPs and the IND protocol requirements and to assure the integrity of the clinical data submitted to the FDA. Additionally, the FDA will typically inspect the facility or the facilities at which the drug is manufactured, unless the facility has recently had an FDA inspection. The FDA also typically inspects the application sponsor. The FDA will not approve the product unless compliance with current good manufacturing practice, or cGMP, requirements is satisfactory and the NDA contains data that provide substantial evidence that the drug is safe and effective in the indication studied. To ensure cGMP and GCP compliance by its employees and third-party contractors, an applicant must incur significant expenditure of time, money and effort in the areas of training, record keeping, production and quality control.

After the FDA evaluates the NDA and the manufacturing facilities, it issues either an approval letter or a complete response letter. The approval process is lengthy and often difficult, and notwithstanding the submission of relevant data and information, the FDA may ultimately decide that the NDA does not satisfy its regulatory criteria for approval and deny approval or may require additional clinical or other data and information. If the agency decides not to approve a NDA, the FDA will issue a complete response letter, or CRL, that describes all of the specific deficiencies in the NDA identified by the FDA. A CRL indicates that the review cycle of the application is complete and the application will not be approved in its present form. The deficiencies identified may be minor, for example, requiring labeling changes, or major, for example, requiring additional clinical trials. Additionally, the CRL may include recommended actions that the applicant might take to place the application in a condition for approval. If a complete response letter is issued, the applicant may either resubmit the NDA, addressing all of the deficiencies identified in the letter, or withdraw the application. If, or when, those deficiencies have been addressed to the FDA's satisfaction in a resubmission of the NDA, the FDA will issue an approval letter to the applicant. The FDA has committed to reviewing such resubmissions in response to an issued CRL in either two or six months depending on the type of information included. Even with the submission of this additional information, however, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval.

An approval letter authorizes commercial marketing of the drug product with the accompanying approved prescribing information for specific indications. Even if a product receives regulatory approval, the approval may be limited to specific indications and dosages or the indications for use may otherwise be limited, which could restrict the commercial value of the product. Further, the FDA may require that certain contraindications, warnings or precautions be included in the product labeling. The FDA also may impose restrictions and conditions on product distribution, prescribing, or dispensing in the form of a risk evaluation and mitigation strategy, or REMS, plan in addition to the approved labeling, to help ensure that the benefits of the drug outweigh its risks. A REMS could include communication plans for healthcare professionals, medication guides for patients, and/or elements to assure safe use, or ETASU. ETASU can include, but are not limited to, special training or certification for prescribing or dispensing, restricted distribution requirements, dispensing only under certain circumstances, special monitoring, and the use of patient registries. The FDA determines the requirement for a REMS, as well as the specific REMS provisions, on a case-by-case basis. If the FDA concludes a REMS plan is needed, the sponsor of the NDA must submit a proposed REMS plan. The requirement for a REMS can materially affect the potential market and profitability of the drug. Moreover, product approval may require substantial post-approval testing and surveillance to monitor the drug's safety or efficacy as described as post marketing commitments or requirements included in the approval letter. Once granted, product approvals may be withdrawn if compliance with regulatory requirements and commitments is not maintained or problems are identified following initial marketing. Moreover, after approval, some types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further testing requirements and FDA review and approval.

Hatch-Waxman Act and New Drug Marketing Exclusivity

Under the Drug Price Competition and Patent Term Restoration Act of 1984, otherwise known as the Hatch-Waxman Amendments to the FDCA, Congress authorized the FDA to approve generic drugs that are the same as drugs previously approved by the FDA under the NDA provisions of the statute and also enacted Section 505(b)(2) of the FDCA. To obtain approval of a generic drug, an applicant must submit an abbreviated new drug application, or ANDA, to the agency. In support of such applications, a generic manufacturer may rely on the preclinical and clinical testing conducted for a drug product previously approved under an NDA, known as the reference listed drug. Specifically, in order for an ANDA to be approved, the FDA must find that the generic version is identical to the Listed Drug with respect to the active ingredients, the route of administration, the dosage form, and the strength of the

drug. In contrast, Section 505(b)(2) permits the filing of an NDA where at least some of the information required for approval comes from studies not conducted by or for the applicant and for which the applicant has not obtained a right of reference. A Section 505(b)(2) applicant may eliminate the need to conduct certain preclinical or clinical studies, if it can establish that reliance on studies conducted for a previously-approved product is scientifically appropriate. Unlike the ANDA pathway used by developers of bioequivalent versions of innovator drugs, which does not allow applicants to submit new clinical data other than bioavailability or bioequivalence data, the 505(b)(2) regulatory pathway does not preclude the possibility that a follow-on applicant would need to conduct additional clinical trials or nonclinical studies; for example, they may be seeking approval to market a previously approved drug for new indications or for a new patient population that would require new clinical data to demonstrate safety or effectiveness. The FDA may then approve the new product for all or some of the label indications for which the Listed Drug has been approved, or for any new indication sought by the Section 505(b)(2) applicant, as applicable.

Upon approval of an NDA or a supplement thereto, NDA sponsors are required to list with the FDA each patent with claims that cover the applicant's product or an approved method of using the product. Each of the patents listed by the NDA sponsor is published in the Orange Book. When an ANDA applicant submits its application to the FDA, the applicant is required to certify to the FDA concerning any patents listed in the Orange Book for the Listed Drug, except for patents covering methods of use for which the follow-on applicant is not seeking approval. To the extent the Section 505(b)(2) applicant is relying on studies conducted for an already approved product, such an applicant is also required to certify to the FDA concerning any patents listed for the approved product in the Orange Book to the same extent that an ANDA applicant would.

Specifically, an ANDA or 505(b)(2) applicant for a follow-on drug product with respect to each patent that: (i) the required patent information has not been filed by the original applicant; (ii) the listed patent already has expired; (iii) the listed patent has not expired, but will expire on a specified date and approval is sought after patent expiration; or (iv) the listed patent is invalid, unenforceable or will not be infringed by the manufacture, use or sale of the new product.

If a Paragraph I or II certification is filed, the FDA may make approval of the application effective immediately upon completion of its review. If a Paragraph III certification is filed, the approval may be made effective on the patent expiration date specified in the application, although a tentative approval may be issued before that time. If an application contains a Paragraph IV certification, a series of events will be triggered, the outcome of which will determine the effective date of approval of the ANDA or 505(b)(2) application.

A certification that the new product will not infringe the Listed Drug's listed patents or that such patents are invalid is called a Paragraph IV certification. If the follow-on applicant has provided a Paragraph IV certification to the FDA, the applicant must also send notice of the Paragraph IV certification to the NDA and patent holders for the Listed Drug once the applicant's NDA has been accepted for filing by the FDA. The NDA and patent holders may then initiate a legal challenge to the Paragraph IV certification. The filing of a patent infringement lawsuit within 45 days of their receipt of a Paragraph IV certification automatically prevents the FDA from approving the ANDA or 505(b)(2) NDA until the earlier of 30 months after the receipt of the Paragraph IV notice, expiration of the patent or a decision in the infringement case that is favorable to the ANDA or 505(b)(2) applicant. Alternatively, if the listed patent holder does not file a patent infringement lawsuit within the required 45-day period, the follow-on applicant's ANDA or 505(b)(2) NDA will not be subject to the 30-month stay.

In addition, under the Hatch-Waxman Amendments, the FDA may not approve an ANDA or 505(b)(2) NDA until any applicable period of non-patent exclusivity for the referenced Listed Drug has expired. These market exclusivity provisions under the FDCA also can delay the submission or the approval of certain applications. The FDCA provides a five-year period of non-patent marketing exclusivity within the United States to the first applicant to gain approval of a NDA for a drug containing a new chemical entity. A drug is a new chemical entity if the FDA has not previously approved any other new drug containing the same active moiety, which is the molecule or ion responsible for the action of the drug substance. During the exclusivity period, the FDA may not accept for review an ANDA or a 505(b)(2) NDA submitted by another company for another version of such drug where the applicant does not own or have a legal right of reference to all the data required for approval. However, an application may be submitted after four years if it contains a certification of patent invalidity or non-infringement.

The FDCA also provides three years of marketing exclusivity for an NDA, 505(b)(2) NDA or supplement to an existing NDA if new clinical investigations, other than bioavailability studies, that were conducted or sponsored by the applicant are deemed by the FDA to be essential to the approval of the application, for example, new indications,

dosages or strengths of an existing drug. This three-year exclusivity covers only the conditions of use associated with the new clinical investigations and does not prohibit the FDA from approving follow-on applications for drugs containing the original active agent. Five-year and three-year exclusivity also will not delay the submission or approval of a traditional NDA filed under Section 505(b)(1) of the FDCA. However, an applicant submitting a traditional NDA would be required to either conduct or obtain a right of reference to all of the preclinical studies and adequate and well-controlled clinical trials necessary to demonstrate safety and effectiveness.

Patent Term Extension

After NDA approval, owners of relevant drug patents may apply for up to a five-year patent term extension. The allowable patent term extension is calculated as half of the drug's testing phase – the time between when the IND becomes effective and NDA submission – and all of the review phase – the time between NDA submission and approval, up to a maximum of five years. The time can be shortened if FDA determines that the applicant did not pursue approval with due diligence. The total patent term after the extension may not exceed 14 years. For patents that might expire during the application phase, the patent owner may request an interim patent extension. An interim patent extension increases the patent term by one year and may be renewed up to four times. For each interim patent extension granted, the post-approval patent extension is reduced by one year. The director of the Patent and Trademark Office (PTO) must determine that approval of the drug covered by the patent for which a patent extension is being sought is likely. Interim patent extensions are not available for a drug for which an NDA has not been submitted.

Pediatric Clinical Trials and Exclusivity

Under the Pediatric Research Equity Act, or PREA, NDAs or certain types of supplements to NDAs must contain data to assess the safety and effectiveness of the drug for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the drug is safe and effective. The sponsor must submit an initial Pediatric Study Plan, or PSP, within 60 days of an end-of-phase 2 meeting or as may be agreed between the sponsor and the FDA. The initial PSP must include an outline of the pediatric study or studies that the sponsor plans to conduct, including study objectives and design, age groups, relevant endpoints and statistical approach, or a justification for not including such detailed information, and any request for a deferral of pediatric assessments or a full or partial waiver of the requirement to provide data from pediatric studies along with supporting information. The FDA and the sponsor must reach agreement on the PSP. A sponsor can submit amendments to an agreed-upon initial PSP at any time if changes to the pediatric plan need to be considered based on data collected from nonclinical studies, early phase clinical trials, and/or other clinical development programs. The FDA may grant full or partial waivers, or deferrals, for submission of pediatric assessment data.

The Best Pharmaceuticals for Children Act, or BPCA, provides NDA holders a six-month extension of any exclusivity – patent or non-patent – for a drug if certain conditions are met, including satisfaction of a pediatric trial(s) agreed with FDA as a Pediatric Written Request. Conditions for pediatric exclusivity include the FDA's determination that information relating to the use of a new drug in the pediatric population may produce health benefits in that population, the FDA making a written request for pediatric clinical trials, and the applicant agreeing to perform, and reporting on, the requested clinical trials within the statutory timeframe. This six-month exclusivity may be granted if an NDA sponsor submits pediatric data that fairly respond to the written request from the FDA for such data. Those data do not need to show the product to be effective in the pediatric population studied; rather, if the clinical trial is deemed to fairly respond to the FDA's request, the additional protection is granted. Although this is not a patent term extension, it effectively extends the regulatory period during which the FDA cannot approve another application.

Orphan Drug Designation and Orphan Product Exclusivity

Under the Orphan Drug Act, the FDA may grant Orphan Drug Designation to a drug candidate intended to treat a rare disease or condition, which is generally a disease or condition that affects (i) fewer than 200,000 individuals in the United States, or (ii) more than 200,000 individuals in the United States and for which there is no reasonable expectation that the cost of developing and marketing the product for this type of disease or condition will be recovered from sales in the United States. Orphan Drug Designation must be requested before submitting an NDA. After the FDA grants Orphan Drug Designation, the identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA. Orphan Drug Designation does not convey any advantage in or shorten the duration of the regulatory review and approval process.

In the United States, Orphan Drug Designation entitles a party to financial incentives such as opportunities for grant funding towards clinical trial costs, tax advantages and user-fee waivers. In addition, if a product candidate that has Orphan Drug Designation subsequently receives the first FDA approval for the disease for which it has such designation, the product is entitled to orphan product exclusivity, which means the FDA may not approve any other application to market the same product for the same indication for a period of seven years, except in limited circumstances, such as a showing of clinical superiority over the product with orphan exclusivity or where the manufacturer with orphan exclusivity is unable to assure sufficient quantities of the approved orphan designated product. Competitors, however, may receive approval of different products for the indication for which the orphan product has exclusivity or obtain approval for the same product but for a different indication for which the orphan product has exclusivity. Orphan product exclusivity also could block the approval of one of our product candidates for seven years if a competitor obtains approval of the same drug as defined by the FDA or if our product candidate is determined to be contained within the competitor's approved product for the same indication or disease. If a drug or biological product designated as an orphan product receives marketing approval for an indication broader than what was previously designated, it may not be entitled to orphan product exclusivity.

Expedited Development and Review Programs

The FDA is authorized to designate certain products for expedited development or review if they are intended to address an unmet medical need in the treatment of a serious or life-threatening disease or condition. These programs include fast track designation, breakthrough therapy designation, and priority review designation. Generally, drugs that may be eligible for these programs are those for serious or life-threatening conditions, those with the potential to address unmet medical needs, and those that offer meaningful benefits over existing treatments.

To be eligible for a fast track designation, the FDA must determine, based on the request of a sponsor, that a product is intended to treat a serious or life-threatening disease or condition and demonstrates the potential to address an unmet medical need by providing a therapy where none exists or a therapy that may be potentially superior to existing therapy based on efficacy or safety factors. Fast track designation provides opportunities for more frequent interactions with the FDA review team to expedite development and review of the product. The FDA may also review sections of the NDA for a fast track product on a rolling basis before the complete application is submitted, if the sponsor and the FDA agree on a schedule for the submission of the application sections, and the sponsor pays any required user fees upon submission of the first section of the NDA. In addition, fast track designation may be withdrawn by the sponsor or rescinded by the FDA if the designation is no longer supported by data emerging in the clinical trial process.

In addition the FDA may designate a product for priority review if it is a drug that treats a serious condition and, if approved, would provide a significant improvement in safety or effectiveness. The FDA determines at the time that the NDA is submitted, on a case-by-case basis, whether the proposed drug represents a significant improvement in treatment, prevention or diagnosis of disease when compared with other available therapies. Significant improvement may be illustrated by evidence of increased effectiveness in the treatment of a condition, elimination or substantial reduction of a treatment-limiting drug reaction, documented enhancement of patient compliance that may lead to improvement in serious outcomes, or evidence of safety and effectiveness in a new subpopulation. A priority review designation is intended to direct overall attention and resources to the evaluation of such applications, and to shorten the FDA's goal for taking action on an original marketing application from ten months to six months.

Congress also created a new regulatory program in 2012 for therapeutic product candidates designated by FDA as "breakthrough therapies" upon a request made by the IND sponsor. A drug may be eligible for designation as a breakthrough therapy if the product is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening condition and preliminary clinical evidence indicates that the product may demonstrate substantial improvement over currently approved therapies on one or more clinically significant endpoints. The benefits of breakthrough therapy designation include the same benefits as fast track designation, as well as more intensive FDA interaction and guidance beginning as early as Phase 1 and an organizational commitment to expedite the development and review of the product, including involvement of senior managers. Drugs designated as breakthrough therapies are also eligible for accelerated approval of their future marketing applications. The FDA must take certain actions with respect to breakthrough therapies, such as holding timely meetings with and providing advice to the product sponsor, intended to expedite the development and review of an application for approval of a breakthrough therapy.

Fast track designation, priority review, and breakthrough therapy designation do not change the standards for approval and may not ultimately expedite the development or approval process. Even if a product qualifies for one or

more of these programs, the FDA may later decide that the product no longer meets the conditions for qualification or decide that the time period for FDA review or approval will not be shortened.

Accelerated Approval

A product candidate may also be eligible for accelerated approval if it treats a serious or life-threatening condition and generally provides a meaningful advantage over available therapies. Accelerated approval allows the FDA to approve the product on the basis of adequate and well-controlled clinical trials establishing that the drug product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit. A surrogate endpoint is a laboratory measurement or physical sign used as an indirect or substitute measurement representing a clinically meaningful outcome. Surrogate endpoints can often be measured more easily or more rapidly than clinical endpoints. The FDA may also grant accelerated approval for such a drug when the product has an effect on an intermediate clinical endpoint that can be measured earlier than an effect on irreversible morbidity or mortality, or IMM, and that is reasonably likely to predict an effect on IMM or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. The FDA has limited experience with accelerated approvals based on intermediate clinical endpoints, but has indicated that such endpoints generally may support accelerated approval when the therapeutic effect measured by the endpoint is not itself a clinical benefit and basis for traditional approval, if there is a basis for concluding that the therapeutic effect is reasonably likely to predict the ultimate long-term clinical benefit of a drug.

Discussions with the FDA about the feasibility of an accelerated approval typically begin early in the development of the drug in order to identify, among other things, an appropriate endpoint. The accelerated approval pathway is most often used in settings in which the course of a disease is long and an extended period of time is required to measure the intended clinical benefit of a drug, even if the effect on the surrogate or intermediate clinical endpoint occurs rapidly. For example, accelerated approval has been used extensively in the development and approval of drugs for treatment of a variety of cancers in which the goal of therapy is generally to improve survival or decrease morbidity and the duration of the typical disease course requires lengthy and sometimes large clinical trials to demonstrate a clinical or survival benefit.

As a condition of approval, the FDA generally requires that a sponsor of a drug receiving accelerated approval perform adequate and well-controlled post-marketing clinical trials to verify and describe the anticipated effect on IMM or other clinical endpoints. Drugs granted accelerated approval must meet the same statutory standards for safety and effectiveness as those granted traditional approval. Because the accelerated approval pathway is usually contingent on a sponsor's agreement to conduct, in a diligent manner, additional post-approval confirmatory studies to verify and describe the drug's clinical benefit, a product candidate approved on this basis is subject to rigorous post-marketing compliance requirements, including the completion of Phase 4 or post-approval clinical trials to confirm the effect on the clinical endpoint. Failure to conduct required post-approval studies, or to confirm the predicted clinical benefit of the product during post-marketing studies, would allow the FDA to withdraw approval of the drug. In addition, all promotional materials for product candidates being considered and approved under the accelerated approval program are subject to prior review by the FDA.

Post-Approval Requirements

Following approval of a new product, the manufacturer and the approved drug product are subject to pervasive and continuing regulation by the FDA, including, among other things, monitoring and record-keeping activities, reporting of adverse experiences with the product, product sampling and distribution restrictions, complying with promotion and advertising requirements, which include restrictions on promoting drugs for unapproved uses or patient populations (i.e., "off-label use") and limitations on industry-sponsored scientific and educational activities. Although physicians may prescribe legally available products for off-label uses, manufacturers may not market or promote such uses. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant liability, including adverse publicity, enforcement action by the FDA, corrective advertising, consent decrees and the full range of civil and criminal penalties available to the FDA. Prescription drug promotional materials also must be submitted to the FDA in conjunction with their first use. Further, if there are any modifications to the approved drug product, including changes in indications, labeling or manufacturing processes or facilities, the applicant may be required to submit and obtain FDA approval of a new NDA or NDA supplement, which may require the applicant to develop additional data or conduct additional preclinical studies or clinical trials.

FDA regulations require that products be manufactured in specific approved facilities and in accordance with cGMPs. The cGMP regulations include requirements relating to organization of personnel, buildings and facilities, equipment, control of components and drug product containers and closures, production and process controls, packaging and labeling controls, holding and distribution, laboratory controls, records and reports and returned or salvaged products. The manufacturing facilities for our product candidates must meet cGMP requirements and satisfy the FDA or comparable foreign regulatory authorities' satisfaction before any product is approved and our commercial products can be manufactured. These manufacturers must comply with cGMPs that require, among other things, quality control and quality assurance, the maintenance of records and documentation and the obligation to investigate and correct any deviations from cGMP. Manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with cGMP requirements and other laws. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain cGMP compliance. The discovery of violative conditions, including failure to conform to cGMPs, could result in enforcement actions, and the discovery of problems with a product after approval may result in restrictions on a product, manufacturer or holder of an approved NDA, including recall.

Once an approval of a prescription drug is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in mandatory revisions to the approved labeling to add new safety information; imposition of post-market or clinical trials to assess new safety risks; or imposition of distribution or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- fines, warning letters or other enforcement-related letters or clinical holds on post-approval clinical trials;
- refusal of the FDA to approve pending NDAs or supplements to approved NDAs, or suspension or revocation of product approvals;
- product seizure or detention, or refusal to permit the import or export of products;
- injunctions or the imposition of civil or criminal penalties;
- consent decrees, corporate integrity agreements, debarment, or exclusion from federal healthcare programs; and
- mandated modification of promotional materials and labeling and the issuance of corrective information.

In addition, the distribution of prescription pharmaceutical products is subject to the Prescription Drug Marketing Act (PDMA), which regulates the distribution of drugs and drug samples at the federal level, and sets minimum standards for the registration and regulation of drug distributors by the states. Both the PDMA and state laws limit the distribution of prescription pharmaceutical product samples and impose requirements to ensure accountability in distribution. Most recently, the Drug Supply Chain Security Act (DSCSA), was enacted with the aim of building an electronic system to identify and trace certain prescription drugs distributed in the United States. The DSCSA mandates phased-in and resource-intensive obligations for pharmaceutical manufacturers, wholesale distributors, and dispensers over a 10-year period that is expected to culminate in November 2023. From time to time, new legislation and regulations may be implemented that could significantly change the statutory provisions governing the approval, manufacturing and marketing of prescription drug products regulated by the FDA. It is impossible to predict whether further legislative or regulatory changes will be enacted, or FDA regulations, guidance or interpretations changed or what the impact of such changes, if any, may be.

Additional Regulation

In addition to the foregoing, local, state and federal U.S. laws regarding environmental protection and hazardous substances affect our business. These and other laws govern our use, handling and disposal of various biological, chemical and radioactive substances used in, and wastes generated by, our operations. If our operations result in

contamination of the environment or expose individuals to hazardous substances, we could be liable for damages and governmental fines. We believe that we are in material compliance with applicable environmental laws and that continued compliance therewith will not have a material adverse effect on our business. We cannot predict, however, how changes in these laws may affect our future operations.

Anti-Corruption Laws

We are subject to the U.S. Foreign Corrupt Practices Act of 1977, as amended, or the FCPA, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act, the Canadian Corruption of Foreign Public Officials Act and possibly other state and national anti-bribery and anti-money laundering laws in countries in which we conduct activities, such as the UK Bribery Act 2010 and the UK Proceeds of Crime Act 2002, collectively, Anti-Corruption Laws. Among other matters, such Anti-Corruption Laws prohibit corporations and individuals from directly or indirectly paying, offering to pay or authorizing the payment of money or anything of value to any foreign government official, government staff member, political party or political candidate, or certain other persons, in order to obtain, retain or direct business, regulatory approvals or some other advantage in an improper manner. We can also be held liable for the acts of our third party agents (including CROs) under the FCPA, the Canadian Corruption of Foreign Public Officials Act, the UK Bribery Act 2010 and possibly other Anti-Corruption Laws. In the healthcare sector, anti-corruption risk can also arise in the context of improper interactions with doctors, key opinion leaders, and other healthcare professionals who work for state-affiliated hospitals, research institutions, or other organizations.

Data Privacy and the Protection of Personal Information

We are subject to laws and regulations governing data privacy and the protection of personal information including health 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 which will continue to affect our business. In the United States, we may be subject to state security breach notification laws, state laws protecting the privacy of health and personal information and federal and state consumer protections laws which regulate the collection, use, disclosure and transmission of personal information. These laws overlap and often conflict and each of these laws is subject to varying interpretations by courts and government agencies, creating complex compliance issues for us. If we fail to comply with applicable laws and regulations we could be subject to penalties or sanctions, including criminal penalties. Our future customers and research partners must comply with laws governing the privacy and security of health information, including the Health Insurance Portability and Accountability Act of 1996 as amended ("HIPAA") and state health information privacy laws. If we knowingly obtain health information that is protected under HIPAA, called "protected health information," our customers or research collaborators may be subject to enforcement and we may have direct liability for the unlawful receipt of protected health information or for aiding and abetting a HIPAA violation.

State laws protecting health and personal information are becoming increasingly stringent. For example, California has implemented the California Confidentiality of Medical Information Act that imposes restrictive requirements regulating the use and disclosure of health information and other personally identifiable information, and California has recently adopted the California Consumer Privacy Act of 2018 ("CCPA"). The CCPA mirrors a number of the key provisions of the EU General Data Protection Regulation ("GDPR"). The CCPA establishes a new privacy framework for covered businesses by creating an expanded definition of personal information, establishing new data privacy rights for consumers in the State of California, imposing special rules on the collection of consumer data from minors, and creating a new and potentially severe statutory damages framework for violations of the CCPA and for businesses that fail to implement reasonable security procedures and practices to prevent data breaches. Additionally, a new privacy law, the California Privacy Rights Act ("CPRA"), was approved by California voters in the election on November 3, 2020. The CPRA will modify the CCPA significantly, potentially resulting in further uncertainty, additional costs and expenses in an effort to comply and additional potential for harm and liability for failure to comply. Other states in the U.S. are considering privacy laws similar to CCPA, with Virginia enacting its own such law in early 2021.

Government Regulation Outside of the United States

In addition to regulations in the United States, we are a Canadian registered company and subject to Canadian law, similarly partnering or co-development agreements within the year could substantially alter what jurisdictions and government regulations the company is subject to and will be subject, either directly or through our distribution

partners, to a variety of regulations in other jurisdictions governing, among other things, clinical trials, the privacy of personal data and commercial sales and distribution of our product candidates, if approved.

Whether or not we obtain FDA approval for a product candidate, we must obtain the requisite approvals from regulatory authorities in non-U.S. countries prior to the commencement of clinical trials or marketing of the product in those countries. Certain countries outside of the United States have a process that requires the submission of a clinical trial application much like an IND prior to the commencement of human clinical trials. In Europe, for example, a clinical trial application, or CTA, must be submitted to the competent national health authority and to independent ethics committees in each country in which a company plans to conduct clinical trials. Once the CTA is approved in accordance with a country's requirements, clinical trials may proceed in that country.

The requirements and process governing the conduct of clinical trials, product licensing, pricing and reimbursement vary from country to country, even though there is already some degree of legal harmonization in the European Union member states resulting from the national implementation of underlying E.U. legislation. In all cases, the clinical trials are conducted in accordance with GCP and other applicable regulatory requirements.

To obtain a marketing license for a new drug, or medicinal product in the European Union, the sponsor must obtain approval of a marketing authorization application, or MAA. The way in which a medicinal product can be approved in the European Union depends on the nature of the medicinal product.

The centralized procedure results in a single marketing authorization granted by the European Commission that is valid across the European Union, as well as in Iceland, Liechtenstein, and Norway. The centralized procedure is compulsory for human drugs that are: (i) derived from biotechnology processes, such as genetic engineering, (ii) contain a new active substance indicated for the treatment of certain diseases, such as HIV/AIDS, cancer, diabetes, neurodegenerative diseases, autoimmune and other immune dysfunctions and viral diseases, (iii) officially designated "orphan drugs" (drugs used for rare human diseases) and (iv) advanced-therapy medicines, such as gene-therapy, somatic cell-therapy or tissue-engineered medicines. The centralized procedure may at the request of the applicant also be used for human drugs which do not fall within the above mentioned categories if the human drug (a) contains a new active substance which was not authorized in the European Community; or (b) the applicant shows that the medicinal product constitutes a significant therapeutic, scientific or technical innovation or that the granting of authorization in the centralized procedure is in the interests of patients or animal health at the European Community level.

Under the centralized procedure in the European Union, the maximum timeframe for the evaluation of a marketing authorization application by the European Medicines Agency, or EMA, is 210 days (excluding clock stops, when additional written or oral information is to be provided by the applicant in response to questions asked by the Committee for Medicinal Products for Human Use, or CHMP), with adoption of the actual marketing authorization by the European Commission thereafter. Accelerated evaluation might be granted by the CHMP in exceptional cases, when a medicinal product is expected to be of a major public health interest from the point of view of therapeutic innovation, defined by three cumulative criteria: the seriousness of the disease to be treated; the absence of an appropriate alternative therapeutic approach, and anticipation of exceptional high therapeutic benefit. In this circumstance, EMA ensures that the evaluation for the opinion of the CHMP is completed within 150 days and the opinion issued thereafter.

The mutual recognition procedure, or MRP, for the approval of human drugs is an alternative approach to facilitate individual national marketing authorizations within the European Union. Basically, the MRP may be applied for all human drugs for which the centralized procedure is not obligatory. The MRP is applicable to the majority of conventional medicinal products, and is based on the principle of recognition of an already existing national marketing authorization by one or more member states. In the MRP, a marketing authorization for a drug already exists in one or more member states of the EU and subsequently marketing authorization applications are made in other European Union member states by referring to the initial marketing authorization. The member state in which the marketing authorization was first granted will then act as the reference member state. The member states where the marketing authorization is subsequently applied for act as concerned member states. After a product assessment is completed by the reference member state, copies of the report are sent to all member states, together with the approved summary of product characteristics, labeling and package leaflet. The concerned member states then have 90 days to recognize the decision of the reference member state and the summary of product characteristics, labeling and package leaflet. National marketing authorizations within individual member states shall be granted within 30 days after acknowledgement of the agreement

Should any member state refuse to recognize the marketing authorization by the reference member state, on the grounds of potential serious risk to public health, the issue will be referred to a coordination group. Within a timeframe of 60 days, member states shall, within the coordination group, make all efforts to reach a consensus. If this fails, the procedure is submitted to an EMA scientific committee for arbitration. The opinion of this EMA committee is then forwarded to the Commission, for the start of the decision-making process. As in the centralized procedure, this process entails consulting various European Commission Directorates General and the Standing Committee on Human Medicinal Products or Veterinary Medicinal Products, as appropriate.

For countries outside of the European Union, such as countries in Eastern Europe, Latin America or Asia, the requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement vary from country to country. In all cases, again, the clinical trials are conducted in accordance with GCP and the other applicable regulatory requirements.

If we fail to comply with applicable foreign regulatory requirements, we may be subject to, among other things, fines, suspension of clinical trials, suspension or withdrawal of regulatory approvals, product recalls, seizure of products, operating restrictions, and criminal prosecution.

Europe - Data Privacy

On May 25, 2018, the European General Data Protection Regulation, or GDPR, went into effect, implementing a broad data protection framework that expanded the scope of EU data protection law, including to non-EU entities that process, or control the processing of, personal data relating to individuals located in the EU, including clinical trial data. The GDPR sets out a number of requirements that must be complied with when handling the personal data of European Union-based data subjects including: providing expanded disclosures about how their personal data will be used; higher standards for organizations to demonstrate that they have obtained valid consent or have another legal basis in place to justify their data processing activities; the obligation to appoint data protection officers in certain circumstances; new rights for individuals to be "forgotten" and rights to data portability, as well as enhanced current rights (e.g. access requests); the principal of accountability and demonstrating compliance through policies, procedures, training and audit; and a new mandatory data breach regime. In particular, medical or health data, genetic data and biometric data where the latter is used to uniquely identify an individual are all classified as "special category" data under the GDPR and afforded greater protection and require additional compliance obligations. Further, EU member states have a broad right to impose additional conditions—including restrictions—on these data categories. This is because the GDPR allows EU member states to derogate from the requirements of the GDPR mainly in regard to specific processing situations (including special category data and processing for scientific or statistical purposes). As the EU states continue to reframe their national legislation to harmonize with the GDPR, we will need to monitor compliance with all relevant EU member states' laws and regulations, including where permitted derogations from the GDPR are introduced.

We will also be subject to evolving EU laws on data export, if we transfer data outside the EU to ourselves or third parties outside of the EU. The GDPR only permits exports of data outside the EU where there is a suitable data transfer solution in place to safeguard personal data (e.g. the European Union Commission approved Standard Contractual Clauses). On July 16, 2020, the Court of Justice of the European Union or the CJEU, issued an opinion in the case *Maximilian Schrems vs. Facebook* (Case C-311/18), called *Schrems II*. This decision calls into question certain data transfer mechanisms as between the EU member states and the US. The CJEU is the highest court in Europe and the *Schrems II* decision heightens the burden on data importers to assess U.S. national security laws on their business and future actions of EU data protection authorities are difficult to predict. Consequently, there is some risk of any data transfers from the European Union being halted. If we have to rely on third parties to carry out services for us, including processing personal data on our behalf, we are required under GDPR to enter into contractual arrangements to help ensure that these third parties only process such data according to our instructions and have sufficient security measures in place. Any security breach or non-compliance with our contractual terms or breach of applicable law by such third parties could result in enforcement actions, litigation, fines and penalties or adverse publicity and could cause customers to lose trust in us, which would have an adverse impact on our reputation and business. Any contractual arrangements requiring the transfer of personal data from the EU to us in the United States will require greater scrutiny and assessments as required under *Schrems II* and may have an adverse impact on cross-border transfers of personal data, or increase costs of compliance. The GDPR provides an enforcement authority to impose large penalties for noncompliance, including the potential for fines of up to €20 million or 4% of the annual global revenues of the noncompliant company, whichever is greater. We will be subject to the GDPR when we have a

European Union presence or "establishment" (e.g., EU based subsidiary or operations), when conducting clinical trials with EU based data subjects, whether the trials are conducted directly by us or through a vendor or partner, or offering approved products or services to EU-based data subjects, regardless of whether involving a EU based subsidiary or operations.

Pharmaceutical Coverage, Pricing and Reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of any product candidates for which we may obtain regulatory approval. In the United States and markets in other countries, sales of any products for which we receive regulatory approval for commercial sale will depend, in part, on the availability of coverage and adequate reimbursement from third-party payors. Third-party payors include government programs such as Medicare or Medicaid, managed care plans, private health insurers, and other organizations. These third-party payors may deny coverage or reimbursement for a product or therapy in whole or in part if they determine that the product or therapy was not medically appropriate or necessary. Third-party payors may attempt to control costs by limiting coverage to specific drug products on an approved list, or formulary, which might not include all of the FDA-approved drug products for a particular indication, and by limiting the amount of reimbursement for particular procedures or drug treatments. Additionally, coverage and reimbursement for drug products can differ significantly from payor to payor. The Medicare and Medicaid programs are often used as models by private payors and other governmental payors to develop their coverage and reimbursement policies for drugs. However, one third-party payor's decision to cover a particular drug product does not ensure that other payors will also provide coverage for the product, or will provide coverage at an adequate reimbursement rate.

The cost of pharmaceuticals continues to generate substantial governmental and third party payor interest. We expect that the pharmaceutical industry will experience pricing pressures due to the trend toward managed healthcare, the increasing influence of managed care organizations and additional legislative proposals. Third-party payors are increasingly challenging the price and examining the medical necessity and cost-effectiveness of medical products and services, in addition to their safety and efficacy. We may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of our product candidates to obtain third-party payor coverage, in addition to the costs required to obtain any FDA marketing approvals. Our product candidates may not be considered medically necessary or cost-effective. A payor's decision to provide coverage for a drug product does not imply that an adequate reimbursement rate will be approved. Adequate third-party reimbursement may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product candidate development.

Some third-party payors also require pre-approval of coverage for new or innovative drug therapies before they will reimburse healthcare providers who use such therapies. While we cannot predict whether any proposed cost-containment measures will be adopted or otherwise implemented in the future, these requirements or any announcement or adoption of such proposals could have a material adverse effect on our ability to obtain adequate prices for our product candidates and to operate profitably.

In international markets, reimbursement and healthcare payment systems vary significantly by country, and many countries have instituted price ceilings on specific products and therapies. There can be no assurance that our product candidates will be considered medically reasonable and necessary for a specific indication, that our product candidates will be considered cost-effective by third-party payors, that coverage or an adequate level of reimbursement will be available or that third-party payors' reimbursement policies will not adversely affect our ability to sell our product candidates profitably.

Healthcare Reform and Potential Changes to Healthcare Laws

The United States and some foreign jurisdictions are considering or have enacted a number of legislative and regulatory proposals to change the healthcare system in ways that could affect our ability to sell our future products profitably. Among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality or expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives. The FDA's and other regulatory authorities' policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. If we are slow or unable to adapt to changes in existing requirements or the adoption of new

requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we otherwise may have obtained and we may not achieve or sustain profitability, which would adversely affect our business, prospects, financial condition and results of operations. Moreover, among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access.

By way of example, Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or collectively the PPACA, was enacted in March 2010 and has had a significant impact on the healthcare industry in the U.S. The ACA expanded coverage for the uninsured while at the same time containing overall healthcare costs. With regard to biopharmaceutical products, the PPACA, among other things, addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected, increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and extended the rebate program to individuals enrolled in Medicaid managed care organizations, established annual fees on manufacturers of certain branded prescription drugs, and created a new Medicare Part D coverage gap discount program. Additionally, in December 2019, President Trump signed the Further Consolidated Appropriations Act for 2020 into law (P.L. 116-94) that includes a piece of bipartisan legislation called the Creating and Restoring Equal Access to Equivalent Samples Act of 2019 or the "CREATES Act." The CREATES Act aims to address the concern articulated by both the FDA and others in the industry that some brand manufacturers have improperly restricted the distribution of their products, including by invoking the existence of a REMS for certain products, to deny generic product developers access to samples of brand products. Because generic product developers need samples to conduct certain comparative testing required by the FDA, some have attributed the inability to timely obtain samples as a cause of delay in the entry of generic products. To remedy this concern, the CREATES Act establishes a private cause of action that permits a generic product developer to sue the brand manufacturer to compel it to furnish the necessary samples on "commercially reasonable, market-based terms." Whether and how generic product developments will use this new pathway, as well as the likely outcome of any legal challenges to provisions of the CREATES Act, remain highly uncertain and its potential effects on competition in the U.S. biopharmaceutical marketplace.

As another example, the 2021 Consolidated Appropriations Act signed into law on December 27, 2020 incorporated extensive healthcare provisions and amendments to existing laws, including a requirement that all manufacturers of drugs and biological products covered under Medicare Part B report the product's average sales price, or ASP, to the Department of Health and Human Services ("DHHS") beginning on January 1, 2022, subject to enforcement via civil money penalties.

Since its enactment, there have been executive, judicial and Congressional challenges to certain aspects of the PPACA and we expect there will be additional challenges and amendments to the PPACA in the future. Members of the U.S. Congress have indicated that they may continue to seek to modify, repeal or otherwise invalidate all, or certain provisions of, the PPACA. For example, the Tax Cuts and Jobs Act, or TCJA, was enacted in 2017 and, among other things, removed penalties, starting January 1, 2019, for not complying with the ACA's individual mandate to carry health insurance, commonly referred to as the "individual mandate." In December 2018, a U.S. District Court Judge in the Northern District of Texas ruled that the individual mandate was a critical and inseverable feature of the ACA, and therefore, because it was repealed as part of the TCJA, the remaining provisions of the ACA were invalid and the law in its entirety was unconstitutional. In December 2019, the U.S. Court of Appeals for the Fifth Circuit upheld the District Court ruling that the individual mandate was unconstitutional but remanded the case back to the District Court to determine whether other reforms enacted as part of the ACA but not specifically related to the individual mandate or health insurance could be severed from the rest of the ACA so as not to be declared invalid as well. In March 2020, the United States Supreme Court granted the petitions for writs of certiorari to review this case and allocated one hour for oral arguments, which occurred on November 10, 2020. A decision from the Supreme Court is expected to be issued in Spring 2021. It is unclear how this litigation and other efforts to repeal and replace the PPACA will impact the implementation of the PPACA, the pharmaceutical industry more generally, and our business. Complying with any new legislation or reversing changes implemented under the PPACA could be time-intensive and expensive, resulting in a material adverse effect on our business.

In addition, other legislative changes have been proposed and adopted in the United States since the PPACA that affect healthcare expenditures. These changes include aggregate reductions to Medicare payments to providers of up to 2% per fiscal year pursuant to the Budget Control Act of 2011, which began in 2013 and will remain in effect through 2030 unless additional Congressional action is taken. The Coronavirus Aid, Relief, and Economic Security Act, or

the CARES Act, which was signed into law on March 27, 2020 and was designed to provide financial support and resources to individuals and businesses affected by the COVID-19 pandemic, suspended the 2% Medicare sequester from May 1, 2020 through December 31, 2020, and extended the sequester by one year, through 2030, in order to offset the added expense of the 2020 cancellation. The 2021 Consolidated Appropriations Act was subsequently signed into law on December 27, 2020 and extended the CARES Act suspension period to March 31, 2021. The most recently enacted pandemic-relief legislation, the American Rescue Plan Act of 2021, which President Biden signed into law on March 11, 2021, also includes significant healthcare system reforms and programs intended to strengthen the insurance marketplace established under the PPACA, among others.

Moreover, there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drug products. DHHS has solicited feedback on some of various measures intended to lower drug prices and reduce the out of pocket costs of drugs and implemented others under its existing authority. For example, in May 2019, DHHS issued a final rule to allow Medicare Advantage plans the option to use step therapy for Part B drugs beginning January 1, 2020. This final rule codified a DHHS policy change that was effective January 1, 2019. Congress and the executive branch have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs, making this area subject to ongoing uncertainty.

Individual states in the United States have also increasingly passed legislation and implemented regulations designed to control pharmaceutical product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. In December 2020, the U.S. Supreme Court held unanimously that federal law does not preempt the states' ability to regulate pharmaceutical benefit managers (PBMs) and other members of the healthcare and pharmaceutical supply chain, an important decision that may lead to further and more aggressive efforts by states in this area.

The FDA's and other regulatory authorities' policies also may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our drug candidates. For example, in December 2016, the 21st Century Cures Act, or Cures Act, was signed into law. The Cures Act, among other things, is intended to modernize the regulation of drugs and devices and to spur innovation, but its ultimate implementation is uncertain. In addition, in August 2017, the FDA Reauthorization Act was signed into law, which reauthorized the FDA's user fee programs and included additional drug and device provisions that build on the Cures Act. In addition, the next cycle of Congressional reauthorization for FDA's prescription drug, biologic, and medical device user fee programs must be completed by mid-2022 and that periodic must-pass legislation is typically used as a vehicle to implement federal policy changes or other substantive amendments to the FDCA. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, we may not achieve or sustain profitability, which would adversely affect our business, prospects, financial condition and results of operations.

We expect that the PPACA, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and lower reimbursement, and in additional downward pressure on the price that we receive for any approved product. Any reduction in reimbursement from Medicare or other government-funded 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 product candidates, once regulatory approval is obtained. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative or executive action, either in the United States or abroad. We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, including any future pharmaceutical products for which we secure marketing approval.

Other Healthcare Laws and Compliance Requirements

As we are commercializing our product candidates, if they are approved by the FDA or comparable foreign regulatory agencies for marketing, we will be subject to additional healthcare statutory and regulatory requirements and enforcement by federal government and the states and foreign governments in the jurisdictions in which we conduct our business. Healthcare providers, physicians and third-party payors will play a primary role in the recommendation

and prescription of any other product candidates for which we obtain marketing approval. Our arrangements with third-party payors and customers expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that constrain the business or financial arrangements and relationships through which we market, sell and distribute any products for which we obtain marketing approval.

Restrictions under applicable federal and state healthcare laws and regulations include the following:

- The federal Anti-Kickback Statute prohibits, among other things, any person from knowingly and willfully offering, soliciting, receiving or providing remuneration, directly or indirectly, to induce either the referral of an individual, for an item or service or the purchasing or ordering of a good or service, for which payment may be made under federal healthcare programs such as the Medicare and Medicaid programs. The federal Anti-Kickback Statute is subject to evolving interpretations. In the past, the government has enforced the federal Anti-Kickback Statute to reach large settlements with healthcare companies based on sham consulting and other financial arrangements with physicians. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. In addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the civil False Claims Act;

- The federal civil and criminal false claims laws, including the civil False Claims Act, and civil monetary penalty laws, prohibit, among other things, knowingly presenting or causing the presentation of a false, fictitious or fraudulent claim for payment to the U.S. government, knowingly making, using, or causing to be made or used a false record or statement material to a false or fraudulent claim to the U.S. government, or from knowingly making a false statement to avoid, decrease or conceal an obligation to pay money to the U.S. government. Actions under these laws may be brought by the Attorney General or as a qui tam action by a private individual in the name of the government. The federal government uses these laws, and the accompanying threat of significant liability, in its investigation and prosecution of pharmaceutical and biotechnology companies throughout the U.S., for example, in connection with the promotion of products for unapproved uses and other allegedly unlawful sales and marketing practices;

- The U.S. federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, created new federal, civil and criminal statutes that prohibit among other actions, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payors, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense, and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- The Physician Payments Sunshine Act, enacted as part of the PPACA, among other things, imposes reporting requirements on manufacturers of FDA-approved drugs, devices, biologics and medical supplies covered by Medicare, Medicaid, or the Children's Health Insurance Program to report, on an annual basis, to the Centers for Medicare & Medicaid Services, or CMS, information related to payments and other transfers of value to physicians (defined to include doctors, dentists, optometrists, podiatrists, chiropractors and, beginning in 2022 for payments and other transfers of value provided in the previous year, certain advanced non-physician healthcare practitioners), teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, and their respective implementing regulations impose specified requirements relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA's privacy and security standards directly applicable to "business associates," defined as independent contractors or agents of covered entities, which include certain healthcare providers, health plans, and healthcare clearinghouses, that create, receive, maintain or transmit protected health information in connection with providing a service for or on behalf of a covered entity. HITECH also increased the civil and criminal penalties that may be imposed against covered entities, business associates and possibly other persons, and gave state attorneys general new authority to file civil actions for damages

or injunctions in federal courts to enforce HIPAA and seek attorney's fees and costs associated with pursuing federal civil actions;

- Analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, that 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 that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government and may require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures to the extent that those laws impose requirements that are more stringent than the Physician Payments Sunshine Act, as well as state and local laws that require the registration of pharmaceutical sales representatives; and

- State laws and foreign laws and regulations (particularly European Union laws regarding personal data relating to individuals based in Europe) that govern the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways, thus complicating compliance efforts.

Moreover, in November 2020, the DHHS finalized significant changes to the regulations implementing the Anti-Kickback Statute, with the goal of offering the healthcare industry more flexibility and reducing the regulatory burden associated with those fraud and abuse laws, particularly with respect to value-based arrangements among industry participants.

Ensuring that our current and future business arrangements with third parties comply with applicable healthcare laws and regulations involve substantial costs. Because of the breadth of these laws and the narrowness of available statutory and regulatory exemptions, it is possible that some of our business activities could be subject to challenge under one or more of such laws and that governmental authorities may conclude that our business practices may not comply with current or future statutes, regulations, agency guidance or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of the federal and state laws described above or any other governmental regulations that apply to us, we may be subject to significant civil, criminal and administrative penalties, including monetary penalties, damages, fines, disgorgement, imprisonment, loss of eligibility to obtain approvals from the FDA, exclusion from participation in government contracting, healthcare reimbursement or other government programs, including Medicare and Medicaid, injunctions, reputational harm, and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations. If any of the physicians or other healthcare providers or entities with whom we expect to do business in the future is found to be not in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs. We may also be subject to additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement with a governmental entity to resolve allegations that we have violated these laws. To the extent that any of our product candidates are sold in a foreign country, we may be subject to similar foreign laws and regulations, which may include, for instance, applicable anti-fraud and abuse laws, and implementation of corporate compliance programs and reporting of payments or transfers of value to healthcare professionals.

Facilities

We do not lease or own any real property.

Employees

As of August 31, 2021, we had one full-time employee and 12 consultants. None of our employees or consultants are represented by a labor organization or are party to a collective bargaining arrangement. We consider our relationship with our employee to be good.

Legal Proceedings

From time to time, we may be involved in various claims and legal proceedings relating to claims arising out of our operations. We are not currently a party to any material legal proceedings.

Corporate Structure

We were incorporated under the laws of Alberta, Canada on August 24, 2012 under the name ReVasCor Inc. and were continued under the Canada Business Corporations Act on February 27, 2013 under the name of XORTX Pharma Corp. Upon completion of a reverse take-over transaction on January 10, 2018 with APAC Resources Inc. ("APAC"), a company incorporated under the laws of British Columbia, we changed our name to "XORTX Therapeutics Inc." and XORTX Pharma Corp. became a wholly-owned subsidiary.

Our registered office is located at Suite 4000, 421 – 7th Avenue SW, Calgary, Alberta, Canada T2P 4K9 and our telephone number is (403) 455-7727. Our website address is www.xortx.com. The information contained on, or that can be accessed through, our website is not a part of this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.

MANAGEMENT

Executive Officers and Directors

The following table provides information with respect to our directors and executive officers as of the date of this prospectus. The address for our directors and executive officers is c/o XORTX Therapeutics Inc., Suite 4000, 421 – 7th Avenue S.W., Calgary, Alberta, Canada T2P 4K9.

Name	Residence	Age	Position(s)
Executive Officers			
Allen Warren Davidoff	Alberta, Canada	61	President, Chief Executive Officer and Director
Amar Keshri	Alberta, Canada	43	Chief Financial Officer
Directors			
W. Bruce Rowlands (1)	Ontario, Canada	60	Chairman of the Board and Director
Paul Joseph Van Damme (1)	Ontario, Canada	71	Director
Ian McCulloch Klassen (1)	British Columbia, Canada	54	Director
Jacqueline Le Saux	Ontario, Canada	67	Director
William Farley	New York, United States	66	Director

(1) Member of the Audit Committee

Executive Officers

Allen Warren Davidoff, PHD

Dr. Allen Davidoff has been the President and Chief Executive Officer of the Company since 2018 and of its predecessor company, XORTX Pharma Corp. since 2012. Dr. Davidoff is also a Director. Prior to that, Dr. Davidoff founded and served as Chief Scientific Officer of Stem Cell Therapeutics. Dr. Davidoff holds a Ph.D. degree in Cardiovascular Physiology from the University of Calgary. Dr. Davidoff has a broad range of clinical and regulatory experience and senior management experience in pharmaceutical research and development, including two IND applications or supplemental IND's, two Phase I studies, seven Phase II studies and one NDA.

James Neville Fairbairn, CPA, ICD.D

James Fairbairn has been the Chief Financial Officer of the Company since 2018. Mr. Fairbairn is a Chartered Professional Accountant ("CPA") and a Chartered Accountant ("CA"), having obtained his CA designation in 1987 and is an Institute-certified Director. Mr. Fairbairn holds a Bachelor of Arts from Western University He is an officer and director of several junior listed companies. Since 1987 Mr. Fairbairn has been the president of 1282803 Ontario Inc. which provides CFO consulting services to private and public companies. Mr. Fairbairn stepped down as Chief Financial Officer on July 1, 2021.

Amar Keshri

Amar Keshri joined XORTX as Chief Financial Officer on July 1, 2021 to replace Mr. Fairbairn. Mr. Keshri was most recently involved in providing consulting services to US-based start-ups in the process of going public. He has also worked with a number of large organizations in Canada and internationally involved in a number of service sectors including the life science industry, oil and gas sector and various public practice audit and finance and accounting consulting roles, including with Suncor Energy, PricewaterhouseCoopers LLP and Ernst & Young. Mr. Keshri is a Member of the Institute of Chartered Accountants of Alberta and India. From 2014 to 2018, Mr. Keshri served as a controller for Secure Energy Services Inc. Since April 2021, Mr. Keshri has been the President of Next Level Consultants Inc., which provides consulting and advisory services to private and start-up companies.

Dr. Stephen Haworth

Dr. Stephen Haworth joined XORTX as the Chief Medical Officer effective July 1, 2021. Dr. Haworth holds a medical degree from University College Hospital Medical School, University of London having graduated with Honors. Dr. Haworth brings to XORTX more than 25 years of successful global drug development and leadership in both start up and Fortune 500 pharmaceutical firms in both the United States and Europe. Dr. Haworth has a broad clinical

and regulatory experience that ranges from infectious disease through nephrology, cardiovascular disease and most recently on programs for treatment and prevention of SARS-CoV infection. He has held key roles in numerous FDA and EMA submissions and has been involved in several licensing and M&A transactions. Since 2011, Dr. Haworth has served as the principal consultant for Haworth Biopharmaceutical Consulting Services. In addition, from 2016 to 2018, Dr. Haworth served as the Executive Director Medical Science for Cormedix, Inc. a biopharmaceutical company.

Board of Directors

Bruce Rowlands, Chairman

Bruce Rowlands has held the position of Chairman since May 2018 and a director of XORTX Pharma Corp., the Company's predecessor since 2014. Mr. Rowlands has also served as director of A-Labs Capital II Corp. since 2018. Mr. Rowlands served as chief executive officer of Eurocontrol Technics Group Inc. ("Eurocontrol"), a TSXV listed company, from 2006 to 2018 and as a director of Eurocontrol from 2006 to 2018. Prior to forming Eurocontrol, Mr. Rowlands worked in the biotechnology and investment banking industries as Senior Vice President with Lorus Therapeutics, Inc., a leading Canadian biotechnology company and Vice President and Director of Dominick and Dominick Securities Canada, a Canadian investment banking firm.

Allen Warren Davidoff, PHD

Please see Dr. Davidoff's details in the Executive Officers section above.

Ian Klassen

Ian Klassen has served as a director of the Company since 2020. Mr. Klassen has served as director and chief executive officer of Grande Portage Resources Ltd. since 2007. Mr. Klassen has served as director and chief executive officer of GMV Minerals Inc. since 2007. Mr. Klassen has served as director of eXeBlock Technology Corporation since September 2017. Mr. Klassen served as director of Canabo Medical Corp., now Aleafia Health Inc., from 2014 to 2018, G6 Materials Corp. from 2012 to 2016, Sixty North Gold Mining Ltd. from 2017 to 2019 and Transcanna Holdings Inc. from 2019 to 2020. Mr. Klassen brings almost 30 years of business management, public relations and government affairs experience to the Company. He has extensive experience in the administration of public companies, finance, government policy, media relationship strategies, business/government project management and legislative decision-making. Mr. Klassen has extensive experience chairing governance, audit, and risk assessment and compensation committees. He holds a B.A. (Honours) from the University of Western Ontario and is a recipient of the Commemorative Medal for the 125th Anniversary of the Confederation of Canada in recognition of his significant contribution to his community and country.

Paul Van Damme, B COMM, CPA, MBA

Paul Van Damme has served as a director of the Company and chairman of the audit committee since 2018. Mr. Van Damme served as director of OncoQuest Inc., a subsidiary of Quest PharmaTech Inc. from 2015 to 2020. Mr. Van Damme served as chief financial officer of Structural Genomics Consortium 2012 to 2019 and as chief financial officer of Bradmer Pharmaceutics Inc. from 2007 to 2018. Mr. Van Damme holds a B.Comm. from the University of Toronto and a MBA from the Rotman School of Management. Mr. Van Damme is a Chartered Professional Accountant, who worked for PricewaterhouseCoopers in its Toronto and London, UK offices.

Jacqueline Le Saux

Ms. Le Saux is a seasoned Canadian health care legal executive who has held senior positions at large and small public and private life science companies. Jacqueline's legal experience is focused on securities, pharmaceutical regulatory and intellectual property law. As a Vice President, Legal in both public and private companies Ms. Le Saux has led multiple financings, mergers and acquisitions and product licensing transactions, mitigating risk and executing strategies in the Canadian healthcare industry. Her broad industry experience spans big pharma to early and late-stage research and development, as well as consumer products and pharmaceutical manufacturing. Prior to entering the health care industry, she was a partner at a top tier Canadian law firm, specializing in securities and corporate law. From 2009 to 2018, Ms. Le Saux served as Vice-President, Legal and Compliance for Purdue Pharma L.P. In 2019, she worked as counsel to Purdue Pharma Canada on certain select issues. Ms. Le Saux holds a BScL from Laurentian University, an MBA from the University of Ottawa, and an LLB from the University of Toronto.

William Farley

William Farley was appointed as a director of the Company in May 2021. Mr. Farley has over 35 years of experience in leadership, business development, and sales related to drug discovery, development, and partnering. Mr. Farley has held a senior leadership position at Sorrento Therapeutics, Inc. since 2016. Mr. Farley began his career at Johnson and Johnson, and has also held senior management positions at Pfizer, HitGen Ltd., WuXi Apptec, Inc., and ChemDiv, where he created, built and led global business development teams, and led numerous efforts to create new therapeutic companies in CNS, oncology and anti-infectives. Mr. Farley currently serves on the board of directors of SOMA and as a consultant to various executive management teams, and also advises several boards of directors on the commercialization of assets. He received his Bachelor of Science degree in Chemistry from State University of New York, Oswego and has taken graduate courses at Rutgers and University of California, Irvine.

Corporate Governance

Nasdaq Listing Rule 5620(c) requires that a listed company's bylaws provide for a quorum for any meeting of the holders of the company's common shares of no less than 33 1/3% of the outstanding shares of the company's common stock. Pursuant to the Nasdaq corporate governance rules we, as a foreign private issuer, have elected to comply with practices that are permitted under Canadian law in lieu of the provisions of certain Nasdaq requirements. Our articles provide that a quorum of shareholders for the transaction of business at a meeting of shareholders is two shareholders, or one or more proxyholder representing two members, or one member and a proxyholder representing another member.

Except as stated above, we intend to comply with the rules generally applicable to U.S. domestic companies listed on the Nasdaq. We may in the future decide to use other foreign private issuer exemptions with respect to some of the other listing requirements. Following our home country governance practices, as opposed to the requirements that would otherwise apply to a company listed on the Nasdaq, may provide less protection than is accorded to investors under listing requirements applicable to U.S. domestic issuers.

The Canadian Securities Administrators has issued corporate governance guidelines pursuant to National Policy 58-201–Corporate Governance Guidelines (the "Corporate Governance Guidelines"), together with certain related disclosure requirements pursuant to National Instrument 58-101—Disclosure of Corporate Governance Practices, or NI 58-101. The Corporate Governance Guidelines are recommended as "best practices" for issuers to follow. We recognize that good corporate governance plays an important role in our overall success and in enhancing shareholder value and, accordingly, we will be adopting in connection with the closing of this offering, certain corporate governance policies and practices which reflect our consideration of the recommended Corporate Governance Guidelines.

The disclosure set out below includes disclosure required by NI 58-101 describing our approach to corporate governance in relation to the Corporate Governance Guidelines.

Board Composition and Election of Directors

Composition and Removal of Directors

Our board of directors currently consists of six members. Under our articles and the BCBCA, a director may be removed with or without cause by a resolution passed by a special majority of the votes cast by shareholders present in person or by proxy at a meeting and who are entitled to vote.

Replacement or Removal of Directors

To the extent directors are elected or appointed to fill casual vacancies or vacancies arising from the removal of directors, in both instances whether by shareholders or directors, the directors shall hold office until the remainder of the unexpired portion of the term of the departed director that was replaced.

Under the articles, the number of directors of XORTX will be set at a minimum of three and the directors are authorized to determine the actual number of directors to be elected from time to time.

We have no formal policy regarding board diversity. Our priority in the selection of our board members is identifying members who will further the interests of our shareholders through his or her established record of professional accomplishment, the ability to contribute positively to the collaborative culture among board members, knowledge of our business and understanding of the competitive landscape.

Director Term Limits and Other Mechanisms of Board Renewal

Our board of directors has not adopted director term limits or other automatic mechanisms of board renewal.

Independence of the Members of the Board of Directors

Director Independence

Applicable Nasdaq rules require a majority of a listed company's board of directors to be comprised of independent directors within one year of listing. The policies of the CSE require that we comply with applicable corporate law in connection with outside directors or unrelated directors and the CSE encourages its listed issuers to consider the appropriateness of outside directors and unrelated directors on their boards. Under applicable Nasdaq rules, a director will only qualify as an "independent director" if, in the opinion of the listed company's board of directors, that person does not have a material relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. Under NI 58-101, a director is considered to be independent if he or she is independent within the meaning of National Instrument 52-110-Audit Committees, or NI 52-110. Pursuant to NI 52-110, an independent director is a director who is free from any direct or indirect relationship which could, in the view of our board of directors, be reasonably expected to interfere with a director's independent judgment.

Consistent with these considerations, and based on information provided by each director concerning his or her background, employment and affiliations, our board of directors has affirmatively determined that W. Bruce Rowlands, Paul Joseph Van Damme, Ian McCulloch Klassen, Jacqueline Le Saux, and William Farley, representing 5 of 6 members of our board of directors, are "independent" as that term is defined under the listing standards of the Nasdaq

and NI 58-101. In making this determination, our board of directors considered the current and prior relationships that each non-employee director has with our company and all other facts and circumstances our board of directors deemed relevant in determining their independence, including the beneficial ownership of our shares by each non-employee director. Dr. Davidoff is not independent by reason of the fact that he is our Chief Executive Officer.

Mandate of the Board of Directors

Our board of directors will hold regularly-scheduled quarterly meetings as well as ad hoc meetings from time to time. The independent members of our board of directors will also meet, as required, without the non-independent directors and members of management before or after each regularly scheduled board meeting.

A director who has a material interest in a matter before our board of directors or any committee on which he or she serves is required to disclose such interest as soon as the director becomes aware of it. In situations where a director has a material interest in a matter to be considered by our board of directors or any committee on which he or she serves, such director may be required to absent himself or herself from the meeting while discussions and voting with respect to the matter are taking place. Directors will also be required to comply with the relevant provisions of our articles and the BCBCA regarding conflicts of interest.

Meetings of Directors

Our board of directors is responsible for the stewardship of the Company and providing oversight as to the management of our business and affairs, including providing guidance and strategic oversight to management. Our board has adopted a formal mandate that will be effective immediately prior to the consummation of this offering and include the following:

- appointing our Chief Executive Officer;
- developing the corporate goals and objectives that our Chief Executive Officer is responsible for meeting and reviewing the performance of our Chief Executive Officer against such corporate goals and objectives;
- taking steps to satisfy itself as to the integrity of our Chief Executive Officer and other executive officers and that our Chief Executive Officer and other executive officers create a culture of integrity throughout the organization;
- reviewing and approving our Code of Conduct and reviewing and monitoring compliance with the Code of Conduct and our enterprise risk management processes;
- adopting a strategic planning process to establish objectives and goals for our business and reviewing, approving, and modifying, as appropriate, the strategies proposed by management to achieve such objectives and goals; and
- reviewing and approving material transactions not in the ordinary course of business.

Board Committees

Our board of directors has an audit committee. In connection with this offering and a potential listing of our common shares on Nasdaq or the NYSE, we plan to establish a compensation committee and a corporate governance and nominating committee.

Audit Committee

Our audit committee consists of Mr. Klassen, Mr. Rowlands, and Mr. Van Damme. Mr. Van Damme serves as the chair of our audit committee and has been identified as an "audit committee financial expert" as that term is defined in the rules and regulations established by the SEC. The members of our audit committee are "financially literate" and "independent" within the meaning of the Nasdaq or the NYSE and NI 52-110. For additional details regarding the relevant education and experience of each member of our audit committee see "Management—Executive Officers and Directors." The principal purpose of our audit committee is to assist our board of directors in its oversight of:

- the quality and integrity of our financial statements and related information;
- the independence, qualifications, appointment and performance of our external auditor;
- our disclosure controls and procedures, internal control over financial reporting and management's responsibility for assessing and reporting on the effectiveness of such controls;
- our compliance with applicable legal and regulatory requirements; and
- our enterprise risk management processes.

Our board of directors has established a written charter that will be effective immediately prior to the consummation of the offering setting forth the purpose, composition, authority and responsibility of our audit committee, consistent with the rules of the Nasdaq or the NYSE, the SEC and NI 52-110.

Our audit committee has access to all of our books, records, facilities and personnel and may request any information about us as it may deem appropriate. It also has the authority in its sole discretion and at our expense, to retain and set the compensation of outside legal, accounting or other advisors as necessary to assist in the performance of its duties and responsibilities.

Both our independent auditors and internal financial personnel regularly meet privately with the audit committee and have unrestricted access to this committee. Smythe LLP was retained as auditor of the Company's predecessor, XORTX Pharma Corp., and continued as auditor of the Company effective January 9, 2018, the date of the reverse take-over between APAC Resources Inc. and XORTX Pharma Corp. to form XORTX Therapeutics Inc. Prior to Smythe LLP being retained, Manning Elliott LLP acted as auditor of the Company from May 31, 2011 to January 9, 2018. Aggregate fees billed by our independent auditors, Smythe LLP for the year ended December 31, 2020 were approximately $18,750.

	December, 31 2020 ($)	December, 31 2019 ($)	December, 31 2018 ($)	February 28, 2017 ($)(1)(2)
Audit Fees	$ 18,750	$ 19,500	$ 13,500	$ 12,500
Audit-Related Fees	—	—	—	—
Tax Fees	—	6,000	3,000	—
All Other Fees	—	—	950	—
Total Fees Paid	$ 18.750	$ 25,500	$ 17,450	$ 12,500

(1) Audit fees for the year ended February 28, 2017 relate to APAC Resources Inc. fiscal years ended February 28, 2017. The Company's fiscal year end was changed to December 31 on January 9, 2018 in connection with the reverse-takeover transaction between APAC Resources Inc. and XORTX Pharma Corp.
(2) No additional audit fees were incurred by the Company from the period from February 28, 2017 to December 31, 2017.

Compensation Committee

In connection with this offering and a potential listing of our common shares on Nasdaq or the NYSE, we have established a compensation committee, which consists of Ian Klassen, Paul Van Damme, and William Farley. Each

member of the compensation committee qualifies as "independent" under the listing standards of Nasdaq or the NYSE, the rules and regulations of the SEC and NI 52-110. For additional details regarding the relevant education and experience of each member of our compensation committee see "Management—Executive Officers and Directors." The principal purpose of our compensation committee is to:

- review and approve corporate goals and objectives relevant to CEO compensation, evaluate the CEO's performance in light of these goals and
- objectives and, either as a committee or together with other independent directors, determine and approve the CEO's compensation level based on this evaluation; recommend to the Board non-
- CEO compensation, incentive-based plans, equity-based plans and policies relating to the determination and payment of bonuses; and
- review compensation disclosure in public documents, and produce the Committee's annual report on executive compensation for inclusion in the company's information (proxy) circular, in accordance with applicable rules and regulations.

Corporate Governance and Nominating Committee

In connection with this offering and a potential listing of our common shares on Nasdaq or the NYSE, we have established a corporate governance and nominating committee, consisting of Bruce Rowlands, Jacqueline Le Saux, and Paul Van Damme. Each member of the corporate governance and nominating committee qualifies as "independent" under the listing standards of Nasdaq or the NYSE, the rules and regulations of the SEC and NI 52-110. For additional details regarding the relevant education and experience of each member of our corporate governance and nominating committee see "Management—Executive Officers and Directors." The principal purpose of our proposed corporate governance and nominating committee is to:

- identify qualified individuals to become members of the board of directors, consistent with criteria approved by the board of directors;
- determine the composition of the board of directors and its committees;
- select the director nominees for the next annual meeting of shareholders;
- monitors a process to assess the board of directors, committee and management effectiveness;
- aid and monitor management succession planning; and
- develop, recommend to the board of directors, implement and monitor policies and processes related to our Company's corporate governance guidelines.

Director Attendance

Each director has attended all board meetings that we have held since January 1, 2020.

Code of Business Conduct and Ethics

The Code of Conduct will be applicable to all of our directors, officers and employees, including our Chief Executive Officer, Chief Financial Officer, controller or principal accounting officer, or other persons performing similar functions, which is a "code of ethics" as defined in Item 16B of Form 20-F promulgated by the SEC and which is a "code" under NI 58-101. The Code of Conduct will set out our fundamental values and standards of behavior that are expected from our directors, officers, employees, consultants and contractors with respect to all aspects of our business. The objective of the Code of Conduct is to provide guidelines to promote integrity and deter wrongdoing.

Upon the effectiveness of the registration statement of which this prospectus forms a part, the full text of the Code of Conduct will be posted on our website at www.xortx.com. The written Code of Conduct will also be filed with the Canadian securities regulatory authorities on SEDAR at www.sedar.com. Information contained on, or that can be accessed through, our website does not constitute a part of this prospectus and is not incorporated by reference herein. If we make any amendment to the Code of Conduct or grant any waivers, including any implicit waiver,

from a provision of the code of ethics, we will disclose the nature of such amendment or waiver on our website to the extent required by the rules and regulations of the SEC and the Canadian Securities Administrators. Under Item 16B of the SEC's Form 20-F, if a waiver or amendment of the Code of Conduct applies to our principal executive officer, principal financial officer, principal accounting officer or controller and relates to standards promoting any of the values described in Item 16B(b) of Form 20-F, we will disclose such waiver or amendment on our website in accordance with the requirements of Instruction 4 to such Item 16B.

Monitoring Compliance with the Code of Conduct

Following the closing of this offering and a potential listing on Nasdaq or the NYSE, our corporate governance and nominating committee will be responsible for reviewing and evaluating the Code of Conduct at least annually and will recommend any necessary or appropriate changes to our board of directors for consideration. The corporate governance and nominating committee will assist our board of directors with the monitoring of compliance with the Code of Conduct, and will be responsible for considering any waivers of the Code of Conduct (other than waivers applicable to members of the corporate governance and nominating committee, which shall be considered by the audit committee, or waivers applicable to our directors or executive officers, which shall be subject to review by our board of directors as a whole).

Position Descriptions

Our board of directors has adopted a written position description for the Chairman of the board of directors that will be effective immediately prior to the consummation of the offering, which sets out the Chairman's key responsibilities, including, among others, duties relating to setting board of director meeting agendas, chairing board of director and shareholder meetings, director development and ensuring the board of directors is provided with timely and relevant information to effectively discharge its duties and responsibilities.

Our board of directors will adopt a written position description for each of our committee chairs which sets out each of the committee chair's key responsibilities, including, among others, duties relating to setting committee meeting agendas, chairing committee meetings and working with the respective committee and management to ensure, to the greatest extent possible, the effective functioning of the committee.

Our board of directors will adopt a written position description for our Chief Executive Officer which sets out the key responsibilities of our Chief Executive Officer, including, among other duties in relation to providing overall leadership, working with the board of directors to develop our strategic direction and the annual corporate plan and budget, and managing the day-to-day business and affairs of the Company and carrying out such duties and responsibilities as is customary for a Chief Executive Officer of a company in a similar industry and stage of development.

Orientation and Continuing Education

Our board of directors does not have a formal orientation or education program for its members. Our board of directors continuing education is typically derived from the Company's legal counsel to remain up to date with developments in relevant corporate and securities law matters.

Advisors to Directors and Executive Officers

On August 6, 2020, the Company announced the appointment of Dr. David Sans as Director of Corporate Development to be based in New York City. This position is not a member of the Board of Directors of the Company. Dr. Sans is responsible for planning and facilitation of XORTX corporate goals. Dr. Sans is Board Certified in Regenerative Medicine from the American Board of Regenerative Medicine ("ABRM") and has a Master's Degree in Chemical Engineering as well as a Ph.D. in Life Sciences and a MBA in Business Law.

EXECUTIVE AND DIRECTOR COMPENSATION

Introduction

The following section describes the significant elements of our executive and director compensation program. Our named executive officers for the year ended December 31, 2020 include our principal executive officer and our principal accounting officer.

Overview

Compensation Philosophy

The goal of our compensation program is to attract, retain and motivate our employees and executives. The board of directors is responsible for setting our executive compensation and establishing corporate performance objectives. However, in connection with this offering and a potential listing on Nasdaq or the NYSE we will form a compensation committee. In considering executive compensation, the board of directors strives to ensure that our total compensation is competitive within the industry in which we operate and supports our overall strategy and corporate objectives. The combination of base salary, annual incentives and long-term incentives that we provide our executive officers is designed to accomplish this. The compensation committee considers the implications of the risks associated with our compensation policies and practices. For additional details regarding the relevant education and experience of each member of our compensation committee see "Management—Executive Officers and Directors." Our named executive officers and directors are not permitted to purchase financial instruments, including, for greater certainty, prepaid variable forward contracts, equity swaps, collars, or units of exchange funds that are designed to hedge or offset a decrease in market value of equity securities granted as compensation or held, directly or indirectly, by the named executive officer or director.

Components of Compensation Package

Compensation for the executive officers is composed primarily of three components: base compensation, performance bonuses and the granting of options. Performance bonuses may be considered from time to time.

Determining Compensation

Our board of directors is responsible for ensuring that the Company has in place an appropriate plan for executive compensation ensuring that total compensation paid to all executive officers is fair and reasonable and is consistent with the Company's compensation philosophy and in line with industry practice. In connection with the offering and the potential listing on Nasdaq or the NYSE we plan to form a compensation committee.

Our board of directors does not have a pre-determined compensation plan, but rather reviews the performance of the executive officers and considers a variety of factors, when determining compensation levels. These factors, which are informally discussed by the Board of Directors, include the long-term interests of the Company and its Shareholders, the financial and operating performance of the Company and each executive officer's individual performance, contribution towards meeting corporate objectives, responsibilities and length of service. Our board of directors believes that the compensation arrangements for the Company's executive officers are commensurate with the executive officer's position, experience and performance. The directors of the Company will continue to review compensation philosophy to ensure that the Company is competitive and that compensation is consistent with the performance of the Company.

Other Compensation

Amounts shown in the "All Other Compensation" column in the Summary Compensation Table relate to contributions to our registered retirement savings plan, provincial healthcare premium, life insurance premiums through our group extended benefit plan, extended medical benefits premiums, parking charges at our office and fitness plan reimbursement.

Director Compensation

During the period ended December 31, 2020, the non-executive directors of the Company received no compensation for director services.

Other than granting options, the Company currently has no compensation arrangements with its non-executive directors.

Each member of our board of directors is entitled to reimbursement for reasonable travel and other expenses incurred in connection with attending board meetings and meetings for any committee on which he or she serves.

Summary Compensation Table

The following table presents the compensation awarded to, earned by or paid to each of our named executive officers and our non-executive directors for the years ended December 31, 2020 and 2019 after giving effect to the Proposed Share Consolidation. We do not have compensation in the form of share-based awards (other than stock options), non-equity incentive plan compensation or non-qualified deferred compensation.

Name and Position	Year	Salary, consulting fee, retainer or commission $(1)	Bonus $(1)	Option Awards $(1)(2)	All Other Compensation $(1)	Total $(1)
Allen Davidoff, CEO	2020	192,000	—	29,683	—	221,683
	2019	192,000	—	17,137	—	209,137
James Fairbairn, CFO (3)	2020	30,000	—	16,510	—	46,510
	2019	30,000	—	12,510	—	42,510
Ian Klassen, Director	2020	—	—	34,224	—	34,224
	2019	—	—	—	—	—
Bruce Rowlands, Director	2020	36,000	—	39,651	—	75,651
	2019	—	—	—	—	—
Paul Van Damme, Director	2020	—	—	32,583	—	32,583
	2019	—	—	—	—	—
Allan Williams, Former Director (4)	2020	—	—	32,583	—	32,583
	2019	—	—	—	—	—
William Farley, Director	2020	—	—	—	—	—
	2019	—	—	—	—	—
Bruce Cousins, Former Director (5)	2020	—	—	32,583	—	32,583
	2019	—	—	—	—	—
Jacqueline Le Saux, Director	2020	—	—	—	—	—
	2019	—	—	—	—	—

(1) Cash compensation amounts for all named executive officers were paid in Canadian dollars.
(2) The amounts set forth in this column reflect the aggregate grant date fair value for option awards computed in accordance with IFRS. See the "Notes to Consolidated Financial Statements—Summary of Significant Accounting Policies—Share-based compensation."
(3) James Fairbairn resigned from his position as CFO on July 1, 2021.
(4) Allan Williams was elected as a director on January 25, 2018 and resigned effective June 16, 2021.
(5) Bruce Cousins was elected as a director on June 27, 2018 and resigned effective August 26, 2020.

Outstanding Equity Awards at 2020 Fiscal Year End

The following table lists all outstanding equity awards held by our named executive officers and non-executive directors as of December 31, 2020 after giving effect to the Proposed Share Consolidation.

Name	Grant Date	Number of Securities Underlying Unexercised Options # Exercisable	Number of Securities Underlying Unexercised Options # Unexercisable	Option Exercise Price ($)	Option Expiration Date
Allen Davidoff, CEO	March 19, 2018	42,589	—	5.87	March 19, 2023
	June 23, 2020	106,473	31,942(3)	1.64	June 23, 2025
James Fairbairn, CFO	November 5, 2018	16,562	4,732(3)	5.87	November 5, 2023

Name	Grant Date	Number of Securities Underlying Unexercised Options # Exercisable	Number of Securities Underlying Unexercised Options # Unexercisable	Option Exercise Price ($)	Option Expiration Date
	June 23, 2020	5,323	15,971(3)	1.64	June 23, 2025
Ian Klassen, Director	August 27, 2020	12,776	—	2.82	August 27, 2025
	January 11, 2021	29,812	—	3.29	January 11, 2026
Bruce Rowlands, Director	March 19, 2018	12,776	—	5.87	March 19, 2023
	June 23, 2020	28,747	9,582(4)	1.64	June 23, 2025
Paul Van Damme, Director	March 19, 2018	12,776	—	5.87	March 19, 2023
	June 23, 2020	25,553	—	1.64	June 23, 2025
Jacqueline Le Saux, Director	—	—	—	—	—

(1) These figures represent the number of vested and exercisable options multiplied by the applicable option exercise price.
(2) Options vest and become exercisable in 36 equal monthly installments following the first anniversary of the grant date.
(3) 25,554 options vested immediately upon grant, the remaining 12,776 vest and become exercisable in 36 equal monthly installments following the first anniversary of the grant date.

Executive Employment Arrangements and Termination and Change in Control Benefits

The Company employs Dr. Allen Davidoff as the Company's President and CEO at an annual salary of $192,000, pursuant to that certain Employment Agreement dated January 1, 2018, between the Company and Dr. Allen Davidoff (the "Davidoff Agreement"). The Davidoff Agreement contains standard confidentiality and non-compete clauses and has an indefinite term. The Davidoff Agreement can be terminated by Dr. Davidoff or the Company by providing 30 days' notice. In the case of the Company providing termination notice, Dr. Davidoff would receive the equivalent of six times his then current monthly salary in a lump sum payment if terminated prior to the first anniversary and if after the first anniversary, Dr. Davidoff is entitled to a lump sum payment of 12 times his then current monthly salary. In the case of a change of control, the Davidoff Agreement provides for a lump sum payment equal to 12 times his monthly base salary amount in effect at the time. As well, all unvested Options then held by Dr. Davidoff shall be deemed to have vested upon any such termination.

The Company entered into a contract with 1282803 Ontario Inc., dated March 1, 2021, for consulting services to the Company to appoint James Fairbairn as the appointed consultant to act in the capacity as chief financial officer, (the "Fairbairn Consulting Agreement"), pursuant to which 1282803 Ontario Inc. is entitled to compensation for the provision of such services of base fees of $8,000 per month, with a discretionary bonus of up to $28,800 to be determined by the board of directors, and Mr. Fairbairn is entitled to participate in the Company's stock plan. This agreement may be terminated at any time and for any reason by either party with 30 days' notice.

The Company entered into a contract with Next Level Consultants Inc., dated July 1, 2021, for consulting services to the Company to appoint Amar Keshri as the appointed consultant to act in the capacity as chief financial officer, (the "Keshri Consulting Agreement"), pursuant to which Next Level Consultants Inc. is entitled to compensation for the provision of such services of base fees of $8,000 per month for July 2021 and $15,000 per month starting August 2021 through the remainder of the agreement's term, with a discretionary bonus of up to 30% of the total value of the contract, subject to the discretion of the Company's compensation committee. Mr. Keshri was also granted 250,000 options. This agreement may be terminated at any time and for any reason by either party with 30 days' notice.

The Company entered into a contract with Haworth Biopharmaceutical Consulting Services Inc., dated July 1, 2021 and effective July 1, 2021, for consulting services to the Company to appoint Stephen Haworth as the appointed consultant to act in the capacity as chief medical officer, (the "Haworth Consulting Agreement"), pursuant to which Haworth Biopharmaceutical Consulting Services Inc. is entitled to compensation for the provision of such services of base fees of US$11,700 per month, with a discretionary bonus of up to 30% of the total value of the contract, subject

to the discretion of the Company's compensation committee. Mr. Haworth was also granted 250,000 options. This agreement may be terminated at any time and for any reason by either party with 30 days' notice or by the Company with no notice but payment of one month's fee for services.

In addition to the arrangements for our executive officers as set forth above, the Company entered into a contract with Mr. David Sans for consulting services to the Company in the capacity as executive advisor, dated February 1, 2021 (the "Sans Consulting Agreement"), pursuant to which Mr. Sans is entitled to compensation for the provision of such services of a base fee of US$11,700 per month, with a onetime bonus of US$144,000 on completion of an offering of at least US$10,000,000 of the Company's shares on a U.S. securities exchange. The agreement generally requires that we indemnify and hold Mr. Sans harmless for liabilities arising out of the Mr. Sans' service, unless the liability resulted from the gross negligence or willful misconduct of any person seeking indemnification for such claim. This agreement may be terminated at any time and for any reason by either party with 30 days' notice.

In addition to the arrangements set forth above, the Company entered into a contract with W.B. Rowlands & Co. Ltd. for consulting services to the Company, dated March 1, 2018 (the "Rowlands Consulting Agreement"), pursuant to which W.B. Rowlands & Co. Ltd. is entitled to compensation for the provision of such services of a base fee of $3,000 per month, with a one-time grant of options to purchase at least 200,000 shares of the Company's common stock, vesting 25% at the effective date of the Rowlands Consulting Agreement, and 25% on the anniversary of each year thereafter until the option grant is fully vested. This agreement may be terminated at any time and for any reason by either party with 30 days' notice.

The Company does not have in place any pension or retirement plan. In connection with or related to the retirement, termination or resignation of such person and the Company has provided no compensation to such persons as a result of change of control of the Company, its subsidiaries or affiliates.

The table below shows the estimated amounts of the termination payments and benefits that will be made to our named executive officers upon the termination of their employment, if such termination were to occur immediately following the completion of this offering. These amounts represent the payments and benefits under the terms of the employment or consulting agreements.

Name and Principal Position	Event	Severance ($)(1)	Options ($)(2)	Other Payments ($)	Total ($)
Allen Davidoff, CEO	Termination by the Company	192,000	—	—	—
	Change of Control	192,000	—	—	—
Amar Keshri, CFO	Termination by the Company	—	—	—	—
	Change of Control	—	—	—	—

(1) Severance payments are calculated based on the executive's base salary.
(2) All options would immediately vest. The value of accelerated vesting of options above is calculated based on the assumed initial public offering price of US$ per share.

Equity Compensation Plan

The following table sets forth aggregated information as at July 30, 2021 with respect to compensation plans of the Company under which equity securities of the Company are authorized for issuance after giving effect to the Proposed Share Consolidation.

Plan Category	Number of Securities to be Issued upon Exercise of Outstanding Options, Warrants and Rights (#)	Weighted-average Exercise Price of Outstanding Options, Warrants and Rights ($)	Number of Securities remaining available for Future Issuance under Equity Compensation Plans (#)
Equity compensation plans approved by security holders (1)	570,698	3.05	358,404
Equity compensation plans not approved by security holders	—	—	—
Total	**570,698**	**3.05**	**358,404**

(1) The Plan is a "rolling" stock option plan whereby the maximum number of Common Shares that may be reserved for issuance pursuant to the Plan will not exceed 10% of the issued shares of the Company at the time of the stock option grant.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

In addition to the compensation arrangements discussed under "Management," the following is a description of the material terms of those transactions with related parties to which we are party and which we are required to disclose pursuant to the disclosure rules of the SEC and the Canadian Securities Administrators.

Employment and Consulting Agreements

We have entered into employment agreements with certain of our executive officers and key employees. For more information regarding these agreements and arrangements, see "Management."

Beneficial Ownership

Since January 1, 2019, after giving effect to the Proposed Share Consolidation, no director or executive officer of the Company who beneficially owns, or controls or directs, directly or indirectly more than 10% of the outstanding Common Shares or any known associate or affiliate of such persons, has or has had any material interest direct or indirect, in any transaction or in any proposed transaction that has materially affected or is reasonably expected to material affect the Company except for Prevail Partners LLC ("Prevail"), which owns 11,473,714 common shares, currently representing 14.13% of the outstanding common shares of the Company. Prevail acquired the 11,473,714 common shares as part of the private placement that closed on February 28, 2020, in connection with an agreement between the Company and Prevail wherein the Company paid a deposit of $1,606,320 (US$1,200,000 at the exchange rate on the date of the transaction) to Prevail to support two clinical trials on behalf of the Company. Prevail, a clinical research organization, is a key partner in XORTX Therapeutics future clinical plans and is anticipated to participate in clinical trials to support XRx-008, XRx-101 and XRx-225 programs in the future.

Policy on Future Related Party Transactions

All future transactions between us and our officers, directors, principal shareholders and their affiliates will be approved by the audit committee, or a similar committee consisting of entirely independent directors, according to the terms of our Code of Business Conduct and Ethics.

Requirements under the Business Corporations Act (British Columbia)

Pursuant to the BCBCA, directors and officers are required to act honestly and in good faith with a view to the best interests of the company. Under the BCBCA, subject to certain limited exceptions, a director who holds a disclosable interest in a material contract or transaction into which we have entered or propose to enter shall not vote on any directors' resolution to approve the contract or transaction. A director or officer has a disclosable interest in a material contract or transaction if the director or officer:

- is a party to the contract or transaction;
- is a director or officer, or an individual acting in a similar capacity, of a party to the contract or transaction; or
- has a material interest in a party to the contract or transaction.

Generally, as a matter of practice, directors or officers who have disclosed a material interest in any contract or transaction that our board of directors is considering will not take part in any board discussion respecting that contract or transaction. If such directors were to participate in the discussions, they would abstain from voting on any matters relating to matters in which they have disclosed a disclosable interest.

Interests of Management and Others in Material Transactions

Other than as described elsewhere in this prospectus, there are no material interests, direct or indirect, of any of our directors or executive officers, any shareholder that beneficially owns, or controls or directs (directly or indirectly), more than 10% of any class or series of our outstanding voting securities, or any associate or affiliate of any of the foregoing persons, in any transaction within the three years before the date hereof that has materially affected or is reasonably expected to materially affect us or any of our subsidiaries. See "Management's Discussion and Analysis of Financial Condition and Results of Operations", "Business" and "Certain Relationships and Related Party Transactions."

PRINCIPAL SHAREHOLDERS

The following table indicates information as of September 15, 2021, regarding the beneficial ownership of our common shares, after giving effect to the sale of common shares offered in this offering and to the Proposed Share Consolidation, for:

- each person who is known by us to beneficially own more than 5% of our common shares;
- each named executive officer;
- each of our directors; and
- all of our directors and executive officers as a group.

Unless otherwise indicated in the footnotes to the table, and subject to community property laws where applicable, the following persons have sole voting and investment control with respect to the shares beneficially owned by them. In accordance with SEC rules, if a person has a right to acquire beneficial ownership of any common shares on or within 60 days of September 15, 2021, upon conversion or exercise of outstanding securities or otherwise, the shares are deemed beneficially owned by that person and are deemed to be outstanding solely for the purpose of determining the percentage of our shares that person beneficially owns. These shares are not included in the computations of percentage ownership for any other person. As of September 15, 2021, we had 32 record holders of our common shares, with 18 record holders in Canada, representing 78.6% of our outstanding common shares, and 13 record holders in the United States, representing 20.8% of our outstanding common shares.

Except as otherwise indicated, the address of each of the persons in this table is Suite 4000, 421 – 7th Avenue SW, Calgary, Alberta, Canada T2P 4K9.

	Shares Beneficially Owned Prior to the Offering	Percentage of Shares Beneficially Owned	
Name and Address of Beneficial Owner		**Before Offering**	**After Offering**
5% and Greater Shareholders:			
Prevail Partnerships LLC (1)	977,318	10.42%	%
Davidoff, Allen (2)	542,533	5.8%	%
Directors and Named Executive Officers:			
Davidoff, Allen (2)	542,533	5.8%	%
Rowlands, W. Bruce (3)	215,017	2.2%	%
Van Damme, Paul (4)	132,658	1.4%	%
Klassen, Ian (5)	85,348	*%	%
May, Charlotte (6)	29,812	*%	%
Haworth, Stephen (7)	21,294	*%	%
Keshri, Amar (8)	21,294	*%	%
Le Saux, Jacqueline (9)	21,294	*%	%
Farley, William (10)	21,294	*%	%
All executive officers and directors as a group (9 persons)	1,090,544	11.6%	%

* Indicates beneficial ownership of less than 1%.

(1) Consists of 977,318 common shares held by Prevail Partners LLC.

(2) Consists of 418,417 common shares, warrants exercisable for 38,938 common shares, and options exercisable for 85,178 common shares within 60 days of September 15, 2021, held personally by Mr. Davidoff.

(3) Consists of 141,764 common shares, warrants exercisable for 22,146 common shares, and options exercisable for 51,107 common shares within 60 days of September 15, 2021, held personally by Mr. Rowlands.

(4) Consists of 63,908 common shares, warrants exercisable for 30,421 common shares, and options exercisable for 38,330 common shares within 60 days of September 15, 2021, held personally by Mr. Van Damme.

(5) Consists of 42,759 common shares, and options exercisable for 42,589 common shares within 60 days of September 15, 2021, held personally by Mr. Klassen.

(6) Consists of options exercisable for 29,812 common shares within 60 days of September 15, 2021, held personally by Ms. May.

(7) Consists of options exercisable for 21,294 common shares within 60 days of September 15, 2021, held personally by Mr. Haworth.

(8) Consists of options exercisable for 21,294 common shares within 60 days of September 15, 2021, held personally by Mr. Keshri.

(9) Consists of options exercisable for 21,294 common shares within 60 days of September 15, 2021, held personally by Ms. Le Saux.

(10) Consists of options exercisable for 21,294 common shares within 60 days of September 15, 2021, held personally by Mr. Farley.

DESCRIPTION OF SHARE CAPITAL

General

The following is a summary of the material rights of our share capital as contained in our notice of articles and articles and any amendments thereto. This summary is not a complete description of the share rights associated with our capital stock. For more detailed information, please see our notice of articles and articles, which are filed as exhibits to the registration statement of which this prospectus forms a part.

Immediately prior to the closing of this offering, our authorized share capital will consist of an unlimited number of common shares, each without par value. We have no preferred shares authorized under our notice of articles or articles. Immediately following the closing of this offering, we expect to have issued and outstanding common shares common shares if the underwriters' over-allotment option is exercised in full). Immediately following the closing of this offering we also expect to have outstanding vested and unvested options granted pursuant to our equity incentive plans to acquire common shares, options available for grant under our equity incentive plans to acquire common shares and outstanding warrants to acquire common shares, assuming an initial public offering price of US$ per security, which is based on the last reported price of our common shares on the OTCQB on August , 2021 of US$ per common share after giving effect to the Proposed Share Consolidation.

Common Shares

Outstanding Shares

As a result, upon closing of this offering, based on the common shares outstanding as of September 15, 2021, our authorized share capital will consist of an unlimited number of common shares, each without par value, of which will be issued and outstanding after giving effect to the Proposed Share Consolidation.

As of September 15, 2021, after giving effect to the Proposed Share Consolidation, we had 435,358 common shares issuable pursuant to exercisable outstanding stock options, 143,857 common shares issuable pursuant to outstanding options that are not currently exercisable, 2,144,005 common shares issuable upon the exercise of outstanding common share warrants, and we had approximately holders of record of our common shares.

Voting Rights

Under our articles, the holders of our common shares will be entitled to one vote for each common share held on all matters submitted to a vote of the shareholders, including the election of directors. Our notice of articles and articles do not provide for cumulative voting rights. Because of this, the holders of a plurality of the common shares entitled to vote in any election of directors can elect all of the directors standing for election, if they so choose.

Dividends

Subject to priority rights that may be applicable to any then outstanding shares, and the applicable provisions of the BCBA, holders of our common shares are entitled to receive dividends, as and when declared by our board of directors, in their sole discretion as they see fit. For more information, see the section titled "Dividend Policy."

Liquidation

In the event of our liquidation, dissolution or winding up, holders of our common shares will be entitled to share ratably in the net assets legally available for distribution to shareholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then outstanding preferred shares.

Rights and Preferences

Our common shares contain no pre-emptive or conversion rights and have no provisions for redemption or repurchase for cancellation, surrender or sinking or purchase funds. There are no provisions in our notice of articles and articles requiring holders of common shares to contribute additional capital. The rights, preferences and privileges

of the holders of our common shares are subject to and may be adversely affected by, the rights of the holders of any series of new preferred shares that may be created, authorized, designated, and issued in the future.

Fully Paid and Non-assessable

All of our outstanding common shares are, and the common shares to be issued pursuant to this offering, when paid for, will be fully paid and non-assessable.

Corporate Governance

Under the BCBCA, we will be required to hold a general meeting of our shareholders at least once every year at a time and place determined by our board of directors, provided that the meeting must not be held later than 15 months after the preceding annual general meeting. A notice to convene a meeting, specifying the date, time and location of the meeting must be sent to shareholders, to each director and the auditor not less than 21 days prior to the meeting or such other minimum period as required by the applicable securities laws. Under the BCBCA, shareholders entitled to notice of a meeting may waive or reduce the period of notice for that meeting, provided applicable securities laws requirements are met.

Pursuant to our articles, all business transacted at a special meeting of shareholders, except business relating to the conduct of or voting at the meeting, and all business transacted at an annual meeting of shareholders, (except business relating to the conduct of or voting at the meeting) consideration of the financial statements, consideration of any director or auditor's report, election of directors, setting or changing of the number of directors, appointment of the auditor, remuneration of the auditor, business arising out of a report of the directors not requiring the passage of a special resolution, and any other business which, under the articles or BCBCA, may be transacted at a meeting of shareholders without prior notice of the business being given to the shareholders, is deemed to be special business. Notice of a meeting of shareholders at which special business is to be transacted shall (a) state the general nature of that business; and (b) if the special business includes considering, ratifying, adopting or authorizing any document, or the signing of any document, have attached to it the document or state that such document is available for inspection.

Under our articles, our board of directors has the power at any time to call a meeting of our shareholders where special business is to be considered.

Those entitled to vote at a meeting are entitled to attend meetings of our shareholders. Every shareholder entitled to vote may appoint one or more (but not to exceed five) proxyholders to attend the meeting in the manner and to the extent authorized and with the authority conferred by the proxy. Directors, auditors, legal counsels, secretaries (if any), and any other persons invited by the directors are entitled to attend any meeting of our shareholders but will not be counted in quorum or be entitled to vote at the meeting unless he or she or it is a shareholder or proxyholder entitled to vote at the meeting.

Material Differences Between the BCBCA and the DGCL

The material differences between the BCBCA and Delaware General Corporation Law (the "DGCL") that may have the greatest such effect include, but are not limited to, the following: (i) for material corporate transactions (such as mergers and amalgamations, other extraordinary corporate transactions or amendments to our articles) the BCBCA generally requires a two-thirds majority vote by shareholders (including, in some circumstances, shareholders that otherwise do not have the right to vote), whereas the DGCL generally requires only a majority vote; (ii) under the BCBCA, holders of 5% or more of our shares that carry the right to vote at a meeting of shareholders can requisition a general meeting of shareholders at which special matters may be conducted, whereas such right does not exist under the DGCL; and (iii) unlike the DGCL which does not provide for any oppression remedy for shareholders of Delaware entities, the BCBCA provides an oppression remedy that enables a court to make an order, whether interim or final, if an application is made to the court by a shareholder in a timely manner and it appears to the court that there are reasonable grounds for believing (A) that the affairs of the corporation are being or have been conducted, or the powers of the directors are being or have been exercised, in a manner that is oppressive to one or more shareholders, or (B) that some act of the corporation has been done or is threatened, or that some resolution of the shareholders or of the shareholders holding shares of a class or series of shares has been passed or is proposed, that is unfairly prejudicial to one or more of the shareholders.

Certain Takeover Bid Requirements

Unless such offer constitutes an exempt transaction, an offer made by a person, an "offeror", to acquire outstanding shares of a Canadian entity that, when aggregated with the offeror's holdings (and those of persons or companies acting jointly with the offeror), would constitute 20% or more of the outstanding shares in a class, would be subject to the take-over provisions of Canadian securities laws. The foregoing is a limited and general summary of certain aspects of applicable securities law in the provinces and territories of Canada, all in effect as of the date hereof.

In addition to those takeover bid requirements noted above, the acquisition of our shares may trigger the application of statutory regimes including among others, the Investment Canada Act (Canada) and the Competition Act (Canada).

Limitations on the ability to acquire and hold our shares may be imposed by the Competition Act (Canada). This legislation permits the Commissioner of Competition, or the Commissioner, to review any acquisition of control over or of a significant interest in us. This legislation grants the Commissioner jurisdiction, for up to one year after closing, to challenge this type of acquisition before the Canadian Competition Tribunal on the basis that it would, or would be likely to, substantially prevent or lessen competition in any market in Canada.

Since we are a publicly-traded corporation, this legislation also requires any person who intends to acquire our voting shares to file a notification with the Canadian Competition Bureau if certain financial thresholds are exceeded and if that person (and their affiliates) would hold more than 20% of our voting shares as a result of such acquisition. If a person already owns more than 20% of our voting shares, a notification must be filed before the acquisition of additional voting shares that would bring that person's holdings to over 50%. Where a notification is required, the legislation prohibits completion of the acquisition until the expiration of a statutory waiting period or, if applicable, a second statutory waiting period, unless the Commissioner provides written notice that he does not intend to challenge the acquisition. A common closing condition of acquisitions subject to notification under the Competition Act (Canada) is clearance from the Commissioner, even if the applicable statutory waiting period has expired and the parties are in a legal position to close.

The Investment Canada Act (Canada) requires any person that is a "non-Canadian" (as defined in the Investment Canada Act (Canada)) who acquires control of an existing Canadian business, where the acquisition of control is not a reviewable transaction, to file a notification with Innovation, Science and Economic Development. The Investment Canada Act (Canada) generally prohibits the implementation of a reviewable transaction unless, after review, the relevant minister is satisfied that the investment is likely to be of net benefit to Canada. Under the Investment Canada Act (Canada), the acquisition of control of us (either through the acquisition of our shares or all or substantially all our assets) by a non-Canadian would be reviewable under the "net benefit" standard only if the applicable specified financial threshold is met or exceeded and no exemption applied.

The acquisition of a majority of the voting interests of an entity is deemed to be acquisition of control of that entity. The acquisition of less than a majority but one-third or more of the voting shares of a corporation or an equivalent undivided ownership interest in the voting shares of a corporation is presumed to be an acquisition of control of that corporation unless it can be established that, on the acquisition, the corporation is not controlled in fact by the acquirer through the ownership of voting shares. The acquisition of less than one-third of the voting shares of a corporation is deemed not to be an acquisition of control of that corporation

Under the national security regime in the Investment Canada Act (Canada), a national security review on a discretionary basis may also be undertaken by the federal government in respect of a much broader range of investments by a non-Canadian to "acquire, in whole or in part, or to establish an entity carrying on all or any part of its operations in Canada", provided that the entity has a specified nexus to Canada. The relevant test is whether such an investment by a non-Canadian could be "injurious to national security." The relevant minister has broad discretion to determine whether an investor is a non-Canadian and may be subject to national security review. Review on national security grounds is at the discretion of the federal government and, depending on the facts, may occur on a pre- or post-closing basis and includes the ability to block a transaction or, for a completed transaction, order divestiture.

There is no law, governmental decree or regulation in Canada that restricts the export or import of capital or which would affect the remittance of dividends or other payments by us to non-Canadian holders of our common shares or preferred shares, other than withholding tax requirements.

Neither our notice of articles to be in effect upon the completion of this offering nor articles to be in effect upon the completion of this offering contain any change of control limitations with respect to a merger, acquisition or corporate restructuring that involves us.

This summary is not a comprehensive description of relevant or applicable considerations regarding such requirements and, accordingly, is not intended to be, and should not be interpreted as, legal advice to any prospective purchaser and no representation with respect to such requirements to any prospective purchaser is made. Prospective investors should consult their own Canadian legal advisors with respect to any questions regarding securities law in the provinces and territories of Canada.

Actions Requiring a Special Majority

Under our articles, the number of votes required for the corporation to pass a special resolution at a meeting of shareholders is two-third of the votes cast on the resolution. Special resolutions include resolutions to: (i) create special rights or restrictions for, and attach such special rights or restrictions to, any class or series of shares; (ii) vary or delete any special rights or restrictions attached to any class or series of shares; and (iii) remove a director before the expiration of his or her term of office.

Advance Notice Procedures and Shareholder Proposals

Under the BCBCA, shareholders may make proposals for matters to be considered at the annual general meeting of shareholders. Such proposals must be sent to us in advance of any proposed meeting by delivering a timely written notice in proper form to our registered office in accordance with the requirements of the BCBCA. The notice must include information on the business the shareholder intends to bring before the meeting. In addition, our articles that will be in place after our upcoming annual general meeting of shareholders and prior to the consummation of this offering, require that shareholders must give advance notice to nominate directors or to submit proposals for consideration at shareholders' meetings.

These provisions could have the effect of delaying until the next shareholder meeting the nomination of certain persons for director that are favored by the holders of a majority of our outstanding voting securities.

Ownership and Exchange Controls

There is currently no law, governmental decree or regulation in Canada that restricts the export or import of capital, or which would affect the remittance of dividends, interest or other payments by us to non-resident holders of our common shares, other than withholding tax requirements, as discussed below under "United States and Canadian Income Tax Considerations — Certain Canadian Federal Income Tax Information."

There is currently no limitation imposed by Canadian law or our articles that will be in effect prior to closing on the right of non-residents to acquire, hold or vote our common shares, other than those imposed by applicable securities laws and the Investment Canada Act (Canada). The Investment Canada Act (Canada) will generally not apply except in respect of national security and where control of a Canadian business, which has an enterprise value or assets at or over a certain threshold, is acquired and will not frequently apply to trading generally of securities listed on a stock exchange.

Listing

We intend to apply to list our common shares on under the symbol "XRTX".

Transfer Agent, Registrar and Auditor

The transfer agent and registrar for our common shares will be TSX Trust Company at its principal office in Toronto, Canada. Our co-transfer agent is Continental Stock Transfer & Trust Company.

Smythe LLP, located at 1700 – 475 Howe Street, Vancouver, British Columbia, Canada V6C 2B3 is our independent registered public accounting firm and has been appointed as our independent auditor.

February 2021 Private Placement Warrants

The following summary of certain terms and provisions of the warrants issued by the Company in February, 2021 (the "Private Placement Warrants") is not complete and is subject to, and qualified in its entirety by, the provisions of the Private Placement Warrants, the form of which is filed as an exhibit to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions of the form of Private Placement Warrants for a complete description of the terms and conditions of the Private Placement Warrants.

On February 9, 2021, the Company closed a private placement with the issuance of 2,085,714 units at a subscription price of $2.94 per unit for gross proceeds of $6,121,572. Each unit comprised one common share and one Private Placement Warrant. Each Private Placement Warrant entitles the holder, on exercise, to purchase one additional common share in the capital of the Company, at a price of $0.40 for a period of 5 years from the issuance of the units; provided, however, that, if, at any time following the expiry of the statutory four month hold period, the closing price of the common shares on the CSE is greater than $1.20 for 10 or more consecutive trading days, the warrants will be accelerated upon notice and the Private Placement Warrant will expire on the 30th calendar day following the date of such notice. In addition, the Private Placement Warrant will also be subject to typical anti-dilution provisions and a ratchet provision that provides for an adjustment in the exercise price should the Company issue or sell common shares or securities convertible into common shares at a price (or conversion price, as applicable) less than the exercise price such that the exercise price shall be amended to match such lower price.

Pre-Funded Warrants to be Issued as Part of this Offering

Duration and Exercise Price

Each pre-funded warrant offered hereby will have an initial exercise price per share equal to US$0.0001. The pre-funded warrants will be immediately exercisable and may be exercised at any time until the pre-funded warrants are exercised in full. The exercise price and number of common shares issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common shares and the exercise price. The pre-funded warrants will be issued separately from the accompanying common warrants, and may be transferred separately immediately thereafter.

Exercisability

The pre-funded warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of common shares purchased upon such exercise (except in the case of a cashless exercise as discussed below). Purchasers of the pre-funded warrants in this offering may elect to deliver their exercise notice following the pricing of the offering and prior to the issuance of the pre-funded warrants at closing to have their pre-funded warrants exercised immediately upon issuance and receive common shares underlying the pre-funded warrants upon closing of this offering. A holder (together with its affiliates) may not exercise any portion of the pre-funded warrant to the extent that the holder would own more than 4.99% of the outstanding common shares immediately after exercise, except that upon at least 61 days' prior notice from the holder to us, the holder may increase the amount of ownership of outstanding stock after exercising the holder's pre-funded warrants up to 9.99% of the number common shares outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the pre-funded warrants. Purchasers of pre-funded warrants in this offering may also elect prior to the issuance of the pre-funded warrants to have the initial exercise limitation set at 9.99% of our outstanding common shares. No fractional common shares will be issued in connection with the exercise of a pre-funded warrant. In lieu of fractional shares, we will round down to the next whole share.

Cashless Exercise

If, at the time a holder exercises its pre-funded warrants, a registration statement registering the issuance of the common shares underlying the pre-funded warrants under the Securities Act is not then effective or available, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of common shares determined according to a formula set forth in the pre-funded warrants.

Transferability

Subject to applicable laws, a pre-funded warrant may be transferred at the option of the holder upon surrender of the pre-funded warrant to us together with the appropriate instruments of transfer.

Exchange Listing

There is no trading market available for the pre-funded warrants on any securities exchange or nationally recognized trading system. We do not intend to list the pre-funded warrants on any securities exchange or nationally recognized trading system.

Right as a Stockholder

Except as otherwise provided in the pre-funded warrants or by virtue of such holder's ownership of our common shares, the holders of the pre-funded warrants do not have the rights or privileges of holders of our common shares, including any voting rights, until they exercise their pre-funded warrants.

Fundamental Transaction

In the event of a fundamental transaction, as described in the pre-funded warrants and generally including any reorganization, recapitalization or reclassification of our common shares, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of our outstanding common shares, or any person or group becoming the beneficial owner of 50% of the voting power represented by our outstanding common shares, the holders of the pre-funded warrants will be entitled to receive upon exercise of the pre-funded warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the pre-funded warrants immediately prior to such fundamental transaction.

Book Entry Form

Pursuant to a warrant agency agreement between us and Continental Stock Transfer & Trust Company, as warrant agent, the pre-funded warrants and the Common Share Purchase Warrants will be issued in book-entry form and the Common Share Purchase Warrants and pre-funded warrants shall each initially be represented only by one or more global warrants deposited with the warrant agent, as custodian on behalf of The Depository Trust Company, or DTC, and registered in the name of Cede & Co., a nominee of DTC, or as otherwise directed by DTC.

Common Share Purchase Warrants to be Issued as Part of this Offering

The following summary of certain terms and provisions of the Common Share Purchase Warrants that are being offered hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the Common Share Purchase Warrants, the form of which is filed as an exhibit to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions of the form of Common Share Purchase Warrants for a complete description of the terms and conditions of the Common Share Purchase Warrants.

Duration and Exercise Price

Each Common Share Purchase Warrant included in the units will have an initial exercise price equal to US$ per common share. The Common Share Purchase Warrants will be immediately exercisable and will expire on the fifth anniversary of the original issuance date. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price. The Common Share Purchase Warrants will be issued separately from the common stock included in the common share units, or the pre-funded warrants included in the pre-funded warrant units, as the case may be. A Common Share Purchase Warrant to purchase share of our common stock will be included in each common share unit or pre-funded warrant unit purchased in this offering.

Cashless Exercise

If, at the time a holder exercises its Common Share Purchase Warrants, a registration statement registering the issuance of the shares of common stock underlying the Common Share Purchase Warrants under the Securities Act is not then effective or available for the issuance of such shares, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the Common Share Purchase Warrants.

Exercisability

The Common Share Purchase Warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of the Common Share Purchase Warrant to the extent that the holder would own more than 4.99% of the outstanding common stock immediately after exercise, except that upon at least 61 days' prior notice from the holder to us, the holder may increase the amount of ownership of outstanding stock after exercising the holder's Common Share Purchase Warrants up to 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the Common Share Purchase Warrants. Purchasers of Common Share Purchase Warrants in this offering may also elect prior to the issuance of the Common Share Purchase Warrants to have the initial exercise limitation set at 9.99% of our outstanding common stock.

Fractional Shares

No fractional shares of common stock will be issued upon the exercise of the Common Share Purchase Warrants. Rather, the number of shares of common stock to be issued will be rounded to the nearest whole number, or the Company shall pay a cash adjustment in respect of the fractional share.

Transferability

Subject to applicable laws, the Common Share Purchase Warrants may be offered for sale, sold, transferred or assigned without our consent. There is currently no trading market for the Common Share Purchase Warrants.

Exchange Listing

There is no trading market available for the Common Share Purchase Warrants on any securities exchange or nationally recognized trading system. We do not intend to list the Common Share Purchase Warrants on any securities exchange or nationally recognized trading system.

Right as a Stockholders

Except as otherwise provided in the Common Share Purchase Warrants or by virtue of such holder's ownership of shares of our common stock, the holders of the Common Share Purchase Warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their Common Share Purchase Warrants.

Fundamental Transaction

In the event of a fundamental transaction, as described in the Common Share Purchase Warrants and generally including any reorganization, recapitalization or reclassification of our common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of our outstanding common stock, or any person or group becoming the beneficial owner of 50% of the voting power represented by our outstanding common stock, the holders of the Common Share Purchase Warrants will be entitled to receive upon exercise of the Common Share Purchase Warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the Common Share Purchase Warrants immediately prior to such fundamental transaction.

Options to Purchase Shares

The following table sets forth the aggregate number of options to purchase our common shares upon completion of this offering after giving effect to the Proposed Share Consolidation:

Category	Number of Options to Acquire Common Shares	Exercise Price ($)(1)	Expiration Date
All of Our Executive Officers and All of Our Directors, as a Group (eight in total)	327,938	$ 2.70	From March 19, 2023 to January 11, 2026

(1) Represents the weighted-average exercise price of all outstanding options to purchase our common shares, whether vested or unvested.

Prior Sales

The following table summarizes issuances of our common shares and securities convertible or exchangeable into common shares during the 12-month period preceding the date of this prospectus after giving effect to the Proposed Share Consolidation.

Date of Issuance	Type of Security	Number of Securities Issued	Issuance/ Exercise Price per Security ($)
June 23, 2020	Stock Options	268,313	1.64
August 27, 2020	Stock Options	12,776	2.82
January 11, 2021	Stock Options	59,625	3.29
January 12, 2021	Shares	17,035	—
January 13, 2021	Shares	836	—
January 13, 2021	Warrants	9,866	1.64
February 1, 2021	Shares	8,517	—
February 4, 2021	Shares	12,168	2.94
February 9, 2021	Shares	2,085,714	2.94
February 9, 2021	Warrants	2,183,693	4.70
February 17, 2021	Shares	4,816	1.64
February 17, 2021	Warrants	5,050	1.64
February 18, 2021	Shares	85,178	2.94
February 19, 2021	Shares	12,776	2.94
February 22, 2021	Warrants	5,653	2.94
February 22, 2021	Shares	17,035	2.94
February 22, 2021	Shares	10,703	1.64
February 25, 2021	Shares	171,817	2.94
February 26, 2021	Warrants	5,050	2.94
March 1, 2021	Shares	8,517	—
March 1, 2021	Shares	17,827	2.94
March 31, 2021	Shares	8,517	—

SHARES ELIGIBLE FOR FUTURE SALE

Future sales of our common shares in the public market could adversely affect prevailing market prices and could impair our ability to raise equity capital in the future. Sales of substantial numbers of our shares in the public market could adversely affect prevailing market prices of our common shares. While we have applied to list our common shares on the Nasdaq Capital Market, we cannot assure you that a regular trading market will develop in our common shares.

Rule 144

In general, under Rule 144 of the Securities Act as currently in effect, beginning 90 days after the date of this prospectus, an "affiliate" who has beneficially owned our shares for a period of at least six months is entitled to sell within any three-month period a number of shares that does not exceed the greater of either 1% of the then outstanding shares or the average weekly trading volume of our shares on the Nasdaq Capital Market or the NYSE during the four calendar weeks preceding the filing with the SEC of a notice on Form 144 with respect to such sale. Such sales under Rule 144 of the Securities Act are also subject to prescribed requirements relating to the manner of sale, notice and availability of current public information about us.

Under Rule 144, a person who is not deemed to have been an affiliate of ours at any time during the 90 days preceding a sale, and who has beneficially owned the shares proposed to be sold for at least six months, including the holding period of any prior holder other than an affiliate, is entitled to sell such shares without restriction, provided we have been in compliance with our reporting requirements under the Exchange Act for 90 days preceding such sale. To the extent that our affiliates sell their shares, other than pursuant to Rule 144 or a registration statement, the purchaser's holding period for the purpose of effecting a sale under Rule 144 commences on the date of transfer from the affiliate. In addition, under Rule 144, any person who is not our affiliate and has not been our affiliate at any time during the preceding three months and has held their shares for at least one year, including the holding period of any prior owner other than one of our affiliates, would be entitled to sell an unlimited number of shares without regard to whether current public information about us is available.

Rule 701

In general, under Rule 701 of the Securities Act as currently in effect, each of our employees or directors who acquire our common shares from us in connection with a compensatory stock plan or other written agreement executed prior to the closing of this offering is eligible to resell such shares in reliance on Rule 144, but without compliance with some of the restrictions, including the holding period, contained in Rule 144.

Regulation S

Regulation S provides generally that sales made in offshore transactions are not subject to the registration or prospectus-delivery requirements of the Securities Act.

Canadian Resale Restrictions

Any sale of any of our shares which constitutes a "control distribution" under Canadian securities laws (generally a sale by a person or a group of persons holding more than 20% of the voting rights attached to our outstanding voting securities) will be subject to restrictions under applicable Canadian securities laws in addition to those restrictions noted above, unless the sale is qualified under a prospectus filed with Canadian securities regulatory authorities or if prior notice of the sale is filed with the Canadian securities regulatory authorities at least seven days before any sale and there has been compliance with certain other requirements and restrictions regarding the manner of sale, payment of commissions, reporting and availability of current public information about us and compliance with applicable Canadian securities laws.

Lock-up Agreements

For a description of the lock-up arrangements that we, our directors, officers, and certain of our shareholders have entered into in connection with this offering, see "Underwriting."

Form S-8 Registration Statement

Following the completion of this offering, we intend to file a registration statement on Form S-8 to register our common shares subject to stock options outstanding as reserved for issuance under our stock option plan. The registration statement with become effective automatically upon filing. Common shares issued upon exercise of a stock option and registered pursuant to the Form S-8 registration statement, subject to vesting provisions, Rule 144 volume limitations applicable to our affiliates, and the lock-up agreements described under "Underwriting", be available for sale in the open market immediately.

TAXATION

The following is, as of the date of this prospectus, a general summary of the principal Canadian federal income tax considerations under the Income Tax Act (Canada), or the Canadian Tax Act, generally applicable to an investor who acquires common share units or pre-funded warrant units pursuant to this offering and who, for the purposes of the Canadian Tax Act and at all relevant times, deals at arm's length with the Company and the underwriters, is not affiliated with the Company or the underwriters and who acquires and holds the common shares, pre-funded warrants, or Common share Purchase Warrants as capital property, or a Holder. Generally, the common shares, pre-funded warrants, and Common Share Purchase Warrants will be considered to be capital property to a Holder thereof provided that the Holder does not use the common shares in the course of carrying on a business of trading or dealing in securities and such Holder has not acquired them in one or more transactions considered to be an adventure or concern in the nature of trade.

This summary does not apply to a Holder (i) that is a "financial institution" for the purposes of the mark-to-market rules contained in the Canadian Tax Act; (ii) that is a "specified financial institution" as defined in the Canadian Tax Act; (iii) if an interest in such a Holder is a "tax shelter" or a "tax shelter investment," each as defined in the Canadian Tax Act; (iv) a holder that reports its "Canadian tax results," as defined in the Canadian Tax Act, in a currency other than Canadian currency; or (v) that has or will enter into a "derivative forward agreement" or a "synthetic disposition arrangement", as those terms are defined in the Canadian Tax Act, with respect to the common shares, pre-funded warrants, and Common Share Purchase Warrants. **Such Holders should consult their own tax advisors with respect to the consequences of acquiring common share units or pre-funded warrant units**.

Additional considerations, not discussed herein, may be applicable to a Holder that (i) is a corporation resident in Canada and (ii) is (or does not deal at arm's length for the purposes of the Canadian Tax Act with a corporation resident in Canada that is), or becomes as part of a transaction or event or series of transactions or events that includes the acquisition of the common share units or pre-funded warrant units, controlled by a corporation that is not resident in Canada for purposes of the "foreign affiliate dumping" rules in section 212.3 of the Canadian Tax Act. **Such Holders should consult their own tax advisors with respect to the consequences of acquiring common share units or pre-funded warrant units.**

This summary is based upon the current provisions of the Canadian Tax Act and the regulations thereunder, or the Regulations, in force as of the date hereof and the Company's understanding of the current published administrative and assessing practices of the Canada Revenue Agency, or the CRA. This summary takes into account all specific proposals to amend the Canadian Tax Act and the Regulations publicly announced by or on behalf of the Minister of Finance (Canada) prior to the date hereof, or the Tax Proposals, and assumes that the Tax Proposals will be enacted in the form proposed, although no assurance can be given that the Tax Proposals will be enacted in their current form or at all. This summary does not otherwise take into account any changes in law or in the administrative policies or assessing practices of the CRA, whether by legislative, governmental or judicial decision or action, nor does it take into account or consider any provincial, territorial or foreign income tax considerations, which considerations may differ significantly from the Canadian federal income tax considerations discussed in this summary.

This summary is of a general nature only, is not exhaustive of all possible Canadian federal income tax considerations and is not intended to be, nor should it be construed to be, legal or tax advice to any particular Holder. This summary does not address the deductibility of interest expense incurred or paid by a Holder that has borrowed money in connection with the acquisition of common share units or pre-funded warrant units pursuant to this offering. **Holders should consult their own tax advisors with respect to their particular circumstances.**

All amounts in a currency other than the Canadian dollar relevant in computing a Holder's liability under the Canadian Tax Act with respect to the acquisition, holding or disposition of common shares, pre-funded warrants, and Common Share Purchase Warrants must generally be converted into Canadian dollars using the single daily exchange rate quoted by the Bank of Canada for the day on which the amount arose or such other rate of exchange that is acceptable to the CRA.

Residents of Canada

The following section of this summary applies to a Holder who, for the purposes of the Canadian Tax Act, is or is deemed to be resident in Canada at all relevant times, or a Canadian Resident Holder. Certain Canadian Resident Holders whose common shares might not constitute capital property may in certain circumstances make an irrevocable election in accordance with subsection 39(4) of the Canadian Tax Act to deem the common shares, and every other "Canadian security" as defined in the Canadian Tax Act, held by such Canadian Resident Holder, in the taxation year

of the election and each subsequent taxation year to be capital property. Canadian Resident Holders should consult their own tax advisors regarding this election.

Dividends

Dividends received or deemed to be received on the common shares will be included in computing a Canadian Resident Holder's income. In the case of an individual (other than certain trusts), such dividends will be subject to the gross-up and dividend tax credit rules normally applicable in respect of "taxable dividends" received from "taxable Canadian corporations" (each as defined in the Canadian Tax Act). An enhanced dividend tax credit will be available to individuals in respect of "eligible dividends" designated by the Company to the Canadian Resident Holder in accordance with the provisions of the Canadian Tax Act.

Dividends received or deemed to be received by a corporation that is a Canadian Resident Holder on the common shares must be included in computing its income but generally will be deductible in computing its taxable income. In certain circumstances, subsection 55(2) of the Canadian Tax Act will treat a taxable dividend received by a Canadian Resident Holder that is a corporation as proceeds of disposition or a capital gain. A Canadian Resident Holder that is a corporation should consult its own tax advisors having regard to its own circumstances. A Canadian Resident Holder that is a "private corporation" as defined in the Canadian Tax Act and certain other corporations controlled, by or for the benefit of an individual (other than a trust) or a related group of individuals (other than trusts) generally will be liable to pay a 38 1/3% refundable tax under Part IV of the Canadian Tax Act on dividends received or deemed to be received on the common shares to the extent such dividends are deductible in computing taxable income. Such refundable tax will generally be refunded to a corporate Canadian Resident Holder at the rate of 38 1/3% of taxable dividends paid while it is a private corporation.

Expiry of Warrants

In the event of the expiry of an unexercised Warrant, a Canadian Resident Holder will be considered to have disposed of such Warrant for nil proceeds and will accordingly realize a capital loss equal to the Canadian Resident Holder's adjusted cost base of such Warrant immediately before that time. For a description of the tax treatment of capital losses, see "Capital Gains and Losses", below.

Exercise of Pre-Funded Warrants or Common Share Purchase Warrants

No gain or loss will be realized by a Canadian Resident Holder on the exercise of a pre-funded warrant or a Common Share Purchase Warrant to acquire common shares. When a pre-funded warrant or a Common Share Purchase Warrant is exercised, the Canadian Resident Holder's cost of the common shares acquired thereby will be equal to the adjusted cost base of the pre-funded warrant or Common Share Purchase Warrant to the Canadian Resident Holder, immediately before that time, plus the amount paid on the exercise of the pre-funded warrant or Common Share Purchase Warrant. For the purpose of computing the adjusted cost base of each common share acquired on the exercise of a pre-funded warrant or Common Share Purchase Warrant, the cost of such common share must be averaged with the adjusted cost base to the Canadian Resident Holder of all other common shares held as capital property immediately before the exercise of the pre-funded warrant or Common Share Purchase Warrant.

Dividends received or deemed to be received by a corporation that is a Canadian Resident Holder on the common shares must be included in computing its income but generally will be deductible in computing its taxable income. In certain circumstances, subsection 55(2) of the Canadian Tax Act will treat a taxable dividend received by a Canadian Resident Holder that is a corporation as proceeds of disposition or a capital gain. A Canadian Resident Holder that is a corporation should consult its own tax advisors having regard to its own circumstances. A Canadian Resident Holder that is a "private corporation" as defined in the Canadian Tax Act and certain other corporations controlled, by or for the benefit of an individual (other than a trust) or a related group of individuals (other than trusts) generally will be liable to pay a 38 1/3% refundable tax under Part IV of the Canadian Tax Act on dividends received or deemed to be received on the common shares to the extent such dividends are deductible in computing taxable income. Such refundable tax will generally be refunded to a corporate Canadian Resident Holder at the rate of 38 1/3% of taxable dividends paid while it is a private corporation.

Dispositions of Common Shares, Pre-Funded Warrants, or Common Share Purchase Warrants

Upon a disposition (or a deemed disposition) of a common share, a Canadian Resident Holder generally will realize a capital gain (or a capital loss) equal to the amount by which the proceeds of disposition of such common share, net of any reasonable costs of disposition, are greater (or are less) than the adjusted cost base of such common share to the Canadian Resident Holder. The tax treatment of capital gains and capital losses is discussed in greater detail below under the subheading "Capital Gains and Capital Losses."

The adjusted cost base to a Canadian Resident Holder of a common share acquired pursuant to this offering will be averaged with the adjusted cost base of any other of the Company's common shares held by such Canadian Resident Holder as capital property for the purposes of determining the Canadian Resident Holder's adjusted cost base of each common share.

Capital Gains and Capital Losses

Generally, a Canadian Resident Holder is required to include in computing its income for a taxation year one-half of the amount of any capital gain (a "taxable capital gain") realized in the year. Subject to and in accordance with the provisions of the Canadian Tax Act, a Canadian Resident Holder is required to deduct one-half of the amount of any capital loss (an "allowable capital loss") realized in a taxation year from taxable capital gains realized in the year by such Canadian Resident Holder. Allowable capital losses in excess of taxable capital gains may be carried back and deducted in any of the three preceding taxation years or carried forward and deducted in any following taxation year against taxable capital gains realized in such year to the extent and under the circumstances described in the Canadian Tax Act.

The amount of any capital loss realized on the disposition or deemed disposition of common shares by a Canadian Resident Holder that is a corporation may be reduced by the amount of dividends received or deemed to have been received by it on such shares or shares substituted for such shares to the extent and in the circumstances specified by the Canadian Tax Act. Similar rules may apply where a Canadian Resident Holder that is a corporation is a member of a partnership or beneficiary of a trust that owns such shares or that itself is a member of a partnership of a beneficiary of a trust that owns such shares. Canadian Resident Holders to whom these rules may be relevant should consult their own tax advisors.

A Canadian Resident Holder that is throughout the relevant taxation year a "Canadian-controlled private corporation" as defined in the Canadian Tax Act may also be liable to pay an additional refundable tax on its "aggregate investment income" for the year which will include taxable capital gains. The rate of the refundable tax is 10 2/3% for taxation years beginning after 2015. Such refundable tax will generally be refunded to a corporate Canadian Resident Holder at the rate of 38 1/3% of taxable dividends paid while it is a private corporation.

Minimum Tax

Capital gains realized and dividends received by a Canadian Resident Holder that is an individual or a trust, other than certain specified trusts, may give rise to minimum tax under the Canadian Tax Act. Such Canadian Resident Holders should consult their own advisors with respect to the application of minimum tax.

Non-Residents of Canada

The following section of this summary is generally applicable to a Holder who, for the purposes of the Canadian Tax Act, and at all relevant times: (i) has not been and will not be deemed to be resident in Canada; and (ii) does not use or hold the common shares, pre-funded warrants, or Common Share Purchase Warrants in, or in the course of, carrying on a business, or part of a business, in Canada, each a Non-Canadian Holder. Special rules, which are not discussed in this summary, may apply to a Non-Canadian Holder that is an insurer carrying on business in Canada and elsewhere or that is an "authorized foreign bank" as defined in the Canadian Tax Act. Such a Non-Canadian Holder should consult its own tax advisors.

Dividends

Dividends on the common shares paid or credited or deemed to be paid or credited to a Non-Canadian Holder will be subject to Canadian withholding tax at the rate of 25% on the gross amount of the dividend unless such rate

is reduced by the terms of an applicable tax treaty. Under the Canada-United States Income Tax Convention (1980), or the Treaty, as amended, the rate of withholding tax on dividends paid or credited to a Non-Canadian Holder who is resident in the U.S. for purposes of the Treaty, is entitled to the full benefits under the Treaty and beneficially owns the dividend, or a U.S. Holder, is generally limited to 15% of the gross amount of the dividend (or 5% in the case of a U.S. Holder that is a corporation beneficially owning at least 10% of the Company's voting shares). Not all persons who are residents of the U.S. for purposes of the Treaty will qualify for the benefits of the Treaty. Non-Canadian Holders that are resident in the U.S. are advised to consult their tax advisors in this regard. The rate of withholding tax on dividends is also reduced under other bilateral income tax treaties or conventions to which Canada is a signatory.

Expiry of Warrants

In the event of the expiry of an unexercised Warrant, a Non-Canadian Holder will be considered to have disposed of such Warrant for nil proceeds and will accordingly realize a capital loss equal to the Canadian Resident Holder's adjusted cost base of such Warrant immediately before that time. For a description of the tax treatment of capital losses, see the discussion under "Non-Residents of Canada - Disposition of Warrants, Pre-Funded Warrants and Common Shares", below.

Exercise of Pre-Funded Warrants or Common Share Purchase Warrants

No gain or loss will be realized by a Non-Canadian Holder on the exercise of a pre-funded warrant or a Common Share Purchase Warrant. When a pre-funded warrant or a Common Share Purchase Warrant is exercised, the Non-Canadian Holder's cost of the common shares acquired thereby will be equal to the adjusted cost base of the pre-funded warrant or the Common Share Purchase Warrant, immediately before that time, plus the amount paid on the exercise of the pre-funded warrant or the Common Share Purchase Warrant. For the purpose of computing the adjusted cost base of each common share acquired on the exercise of a pre-funded warrant or Common Share Purchase Warrant, the cost of such Common Share must be averaged with the adjusted cost base to the Canadian Resident Holder of all other Common Shares held as capital property immediately before the exercise of the Warrant or Pre-Funded Warrant.

Dispositions of Common Shares, Pre-Funded Warrants, and Common Share Purchase Warrants

A Non-Canadian Holder generally will not be subject to tax under the Canadian Tax Act in respect of a capital gain realized on the disposition or deemed disposition of a common share, pre-funded warrant, or Common share Purchase Warrant nor will capital losses arising therefrom be recognized under the Canadian Tax Act, unless the common share, pre-funded warrant, or Common share Purchase Warrant constitutes "taxable Canadian property" to the Non-Canadian Holder thereof for purposes of the Canadian Tax Act, and the gain is not exempt from Canadian federal income tax pursuant to the terms of an applicable tax treaty.

Generally the common shares, pre-funded warrants, or Common Share Purchase Warrants acquired pursuant to this offering will not be "taxable Canadian property" to a Non-Canadian Holder if the common shares are listed on a "designated stock exchange", as defined in the Canadian Tax Act (which currently includes Nasdaq and NYSE) at the time of disposition, unless at any time during the 60 month period immediately preceding the disposition the following two conditions are met concurrently: (i) the Non-Canadian Holder, persons with whom the Non-Canadian Holder did not deal at arm's length, partnerships in which the Non-Canadian Holder or persons with whom the Non-Canadian Holder did not deal at arm's length held a membership interest (either directly or indirectly through one or more partnerships), or the Non-Canadian Holder together with all such persons, owned 25% or more of the Company's issued shares of any class or series of the Company's shares; and (ii) more than 50% of the fair market value of such shares was derived directly or indirectly from one, or any combination of, real or immovable property situated in Canada, "Canadian resource properties" (as defined in the Canadian Tax Act), "timber resource properties" (as defined in the Canadian Tax Act) or an option, an interest or right in such property, whether or not such property exists. Notwithstanding the foregoing, a common share may otherwise be deemed to be taxable Canadian property to a Non-Canadian Holder for purposes of the Canadian Tax Act.

Provided that the common shares are listed on a "recognized stock exchange" (which currently includes Nasdaq, and NYSE), as defined in the Canadian Tax Act at the time of the disposition or deemed disposition of a common share, pre-funded warrant or Common Share Purchase Warrant, a Non-Canadian Holder that disposes of a common share, pre-funded warrant, or Common Share Purchase Warrant that is taxable Canadian property will not be required

to satisfy the obligations imposed under section 116 of the Canadian Tax Act and, as such, the purchaser of such shares, pre-funded warrants, or Common Share Purchase Warrants will not be required to withhold any amount on the purchase price paid. An exemption from such requirements may also be available in respect of such disposition if the common shares, pre-funded warrants, or Common Share Purchase Warrants are "treaty exempt property," as defined in the Canadian Tax Act.

A Non-Canadian Holder's capital gain (or capital loss) in respect of common shares, pre-funded warrants, or Common Share Purchase Warrants that constitute or are deemed to constitute taxable Canadian property (and are not "treaty-protected property" as defined in the Canadian Tax Act) will generally be computed and included in income in the manner described above under the subheadings "Residents of Canada—Dispositions of Common Shares, pre-funded warrants, or Common Share Purchase Warrants" and "Residents of Canada—Capital Gains and Capital Losses".

Non-Canadian Holders whose common shares may be taxable Canadian property should consult their own tax advisors.

Material U.S. Federal Income Tax Considerations for U.S. Holders

The following is a general summary of certain U.S. federal income tax considerations applicable to a U.S. Holder (as defined below) arising from and relating to the acquisition, ownership and disposition of common shares acquired pursuant to this Offering and exercise, disposition, and lapse of Common Share Purchase Warrants acquired pursuant to this Offering, the acquisition, ownership, and disposition of the common shares received upon exercise of such Common Share Purchase Warrants (the "Warrant Shares"), the ownership, exercise and disposition of pre-funded warrants acquired pursuant to this Offering and the common shares received upon the exercise of such pre-funded warrants (the "Pre-Funded Warrant Shares"). The term "securities" as used in this summary includes the common shares, pre-funded warrants, Common Share Purchase Warrants, Warrant Shares and Pre-Funded Warrant Shares, as applicable.

This summary is for general information purposes only and does not purport to be a complete analysis or listing of all potential U.S. federal income tax considerations that may apply to a U.S. Holder as a result of the acquisition of securities pursuant to this Offering. In addition, this summary does not take into account the individual facts and circumstances of any particular U.S. Holder that may affect the U.S. federal income tax consequences to such U.S. Holder, including specific tax consequences to a U.S. Holder under an applicable tax treaty. Accordingly, this summary is not intended to be, and should not be construed as, legal or U.S. federal income tax advice with respect to any particular U.S. Holder. This summary does not address the U.S. federal net investment income, U.S. federal alternative minimum, U.S. federal estate and gift, U.S. state and local, and non-U.S. tax consequences to U.S. Holders of the acquisition, ownership, and disposition of the securities. In addition, except as specifically set forth below, this summary does not discuss applicable tax reporting requirements. Each U.S. Holder should consult its own tax advisor regarding the U.S. federal, U.S. federal net investment income, U.S. federal alternative minimum, U.S. federal estate and gift, U.S. state and local, and non-U.S. tax consequences relating to the acquisition, ownership and disposition of the securities.

No opinion from legal counsel or ruling from the Internal Revenue Service (the "IRS") has been requested, or will be obtained, regarding the U.S. federal income tax considerations applicable to U.S. Holders as discussed in this summary. This summary is not binding on the IRS, and the IRS is not precluded from taking a position that is different from, and contrary to, the positions taken in this summary. In addition, because the authorities on which this summary is based are subject to various interpretations, the IRS and the U.S. courts could disagree with one or more of the positions taken in this summary.

Scope of this Summary

Authorities

This summary is based on the Internal Revenue Code of 1986, as amended (the "Code"), Treasury Regulations (whether final, temporary, or proposed) promulgated under the Code, published rulings of the IRS, published administrative positions of the IRS and U.S. court decisions, that are in effect and available, as of the date of this document. Any of the authorities on which this summary is based could be changed in a material and adverse manner at any time, and any such change could be applied retroactively. This summary does not discuss the potential effects,

whether adverse or beneficial, of any proposed legislation that, if enacted, could be applied on a retroactive or prospective basis.

U.S. Holders

For purposes of this summary, the term "U.S. Holder" means a beneficial owner of the securities acquired pursuant to this Offering that is for U.S. federal income tax purposes:

- a citizen or individual resident of the United States;
- a corporation (or other entity treated as a corporation for U.S. federal income tax purposes) organized under the laws of the United States, any state thereof or the District of Columbia;
- an estate whose income is subject to U.S. federal income taxation regardless of its source; or
- a trust that (1) is subject to the primary supervision of a court within the United States and the control of one or more U.S. persons for all substantial decisions or (2) has a valid election in effect under applicable Treasury Regulations to be treated as a U.S. person.

U.S. Holders Subject to Special U.S. Federal Income Tax Rules Not Addressed

This summary does not address the U.S. federal income tax considerations applicable to U.S. Holders that are subject to special provisions under the Code, including U.S. Holders that: (a) are tax-exempt organizations, qualified retirement plans, individual retirement accounts, or other tax-deferred accounts; (b) are financial institutions, underwriters, insurance companies, real estate investment trusts, or regulated investment companies; (c) are brokers or dealers in securities or currencies or U.S. Holders that are traders in securities that elect to apply a mark-to-market accounting method; (d) have a "functional currency" other than the U.S. dollar; (e) own securities as part of a straddle, hedging transaction, conversion transaction, constructive sale, or other integrated transaction; (f) acquired the securities in connection with the exercise of employee stock options or otherwise as compensation for services; (g) hold the securities other than as a capital asset within the meaning of Section 1221 of the Code (generally, property held for investment purposes); (h) are partnerships and other pass-through entities (and investors in such partnerships and entities); (i) are subject to special tax accounting rules; (j) own, have owned or will own (directly, indirectly, or by attribution) 10% or more of the total combined voting power or value of our outstanding shares; (k) are U.S. expatriates or former long-term residents of the U.S.; or (l) are subject to taxing jurisdictions other than, or in addition to, the United States. U.S. Holders that are subject to special provisions under the Code, including U.S. Holders described immediately above, should consult their own tax advisors regarding the U.S. federal, U.S. federal net investment income, U.S. federal alternative minimum, U.S. federal estate and gift, U.S. state and local, and non-U.S. tax consequences relating to the acquisition, ownership and disposition of the securities.

If an entity or arrangement that is classified as a partnership for U.S. federal income tax purposes holds the securities, the U.S. federal income tax consequences to such entity or arrangement and the owners of such entity or arrangement generally will depend on the activities of such entity or arrangement and the status of such owners. This summary does not address the tax consequences to any such entity or arrangement or owner. Owners of entities or arrangements that are classified as partnerships for U.S. federal income tax purposes should consult their own tax advisor regarding the U.S. federal income tax consequences arising from and relating to the acquisition, ownership, and disposition of the securities.

U.S. Federal Income Tax Consequences of the Acquisition of a common share unit or pre-funded warrant unit

The acquisition of a common share unit or pre-funded warrant unit, as the case may be, should be treated for U.S. federal income tax purposes as the acquisition of a common share or a pre-funded warrant, as applicable, and a Common Share Purchase Warrant. The purchase price for each common share unit or pre-funded warrant unit, as the case may be, will be allocated between a common share or a pre-funded warrant, as applicable, and of a Common Share Purchase Warrant in proportion to their relative fair market values at the time such securities are issued to the U.S. Holder. This allocation of the purchase price for each such common share unit or pre-funded warrant unit, as the case may be, will establish a U.S. Holder's initial tax basis for U.S. federal income tax purposes in the common share or pre-funded warrant, as applicable, and of the Common Share Purchase Warrant that comprise each such common share unit or pre-funded warrant unit. For this purpose, we will allocate US$ of the purchase price to the common share or pre-funded warrant, as applicable, and US$ of the purchase price to the Common Share Purchase Warrant.

Treatment of Pre-Funded Warrants

Although it is not entirely free from doubt, we believe a pre-funded warrant should be treated as a separate class of common shares for U.S. federal income tax purposes and a U.S. Holder of pre-funded warrants and Pre-Funded Warrant Shares should generally be taxed in the same manner as a holder of common shares except as described below. Accordingly, no gain or loss should be recognized upon the exercise of a pre-funded warrant and, upon exercise, the holding period of a pre-funded warrant should carry over to the Pre-Funded Warrant Shares received. Similarly, the tax basis of the pre-funded warrant should carry over to the Pre-Funded Warrant Shares received upon exercise, increased by the exercise price of US$0.0001 per share. However, such characterization is not binding on the IRS, and the IRS may treat the pre-funded warrants as warrants to acquire Common Shares. If so, the amount and character of a U.S. Holder's gain with respect to an investment in pre-funded warrants could change, and a U.S. Holder may not be entitled to make the "QEF Election" or "Mark-to-Market Election" described below to mitigate PFIC consequences in the event that we are classified as a PFIC. Accordingly, each U.S. Holder should consult its own tax advisor regarding the risks associated with the acquisition of a pre-funded warrant pursuant to this Offering (including potential alternative characterizations). The balance of this discussion generally assumes that the characterization described above is respected for U.S. federal income tax purposes.

Passive Foreign Investment Company Rules

If we are considered a "passive foreign investment company" within the meaning of Section 1297 of the Code (a "PFIC") at any time during a U.S. Holder's holding period, the following sections will generally describe the potentially adverse U.S. federal income tax consequences to U.S. Holders of the acquisition, ownership, and disposition of the securities.

We believe that we were classified as a PFIC for the tax year ended December 31, 2020. Based on current business plans and financial expectations, we anticipate that we may be a PFIC for the current tax year and future tax years. No opinion of legal counsel or ruling from the IRS concerning our status as a PFIC has been obtained or is currently planned to be requested. The determination of whether any corporation was, or will be, a PFIC for a tax year depends, in part, on the application of complex U.S. federal income tax rules, which are subject to differing interpretations. In addition, whether any corporation will be a PFIC for any tax year depends on the assets and income of such corporation over the course of each such tax year and, as a result, our PFIC status for the current year and future years cannot be predicted with certainty as of the date of this document. Accordingly, there can be no assurance that the IRS will not challenge any PFIC determination made by us (or by one of our subsidiaries). Each U.S. Holder should consult its own tax advisor regarding our status as a PFIC and the PFIC status of each non-U.S. subsidiary.

In any year in which we are classified as a PFIC, a U.S. Holder will be required to file an annual report with the IRS containing such information as Treasury Regulations and/or other IRS guidance may require. In addition to penalties, a failure to satisfy such reporting requirements may result in an extension of the time period during which the IRS can assess a tax. U.S. Holders should consult their own tax advisors regarding the requirements of filing such information returns under these rules, including the requirement to file an IRS Form 8621.

We generally will be a PFIC for any tax year in which (a) 75% or more of our gross income for such tax year is passive income (the "PFIC income test") or (b) 50% or more of the value of our assets either produce passive income or are held for the production of passive income, based on the quarterly average of the fair market value of such assets (the "PFIC asset test"). "Gross income" generally includes sales revenues less the cost of goods sold, plus income from investments and from incidental or outside operations or sources, and "passive income" generally includes, for example, dividends, interest, certain rents and royalties, certain gains from the sale of stock and securities, and certain gains from commodities transactions. Active business gains arising from the sale of commodities generally are excluded from passive income if substantially all of a foreign corporation's commodities are stock in trade or inventory, depreciable property used in a trade or business, or supplies regularly used or consumed in the ordinary course of its trade or business, and certain other requirements are satisfied.

For purposes of the PFIC income test and PFIC asset test described above, if we own, directly or indirectly, 25% or more of the total value of the outstanding shares of another corporation, we will be treated as if we (a) held a proportionate share of the assets of such other corporation and (b) received directly a proportionate share of the income of such other corporation. In addition, for purposes of the PFIC income test and PFIC asset test described

above, "passive income" does not include any interest, dividends, rents, or royalties that are received or accrued by us from a "related person" (as defined in Section 954(d)(3) of the Code), to the extent such items are properly allocable to the income of such related person that is not passive income.

Under certain attribution rules, if we are a PFIC, U.S. Holders will be deemed to own their proportionate share of any of our subsidiaries which is also a PFIC (a "Subsidiary PFIC"), and will generally be subject to U.S. federal income tax under the "Default PFIC Rules Under Section 1291 of the Code" discussed below on their proportionate share of any (i) distribution on the shares of a Subsidiary PFIC and (ii) disposition or deemed disposition of shares of a Subsidiary PFIC, both as if such U.S. Holders directly held the shares of such Subsidiary PFIC. Accordingly, U.S. Holders should be aware that they could be subject to tax under the PFIC rules even if no distributions are received and no redemptions or other dispositions of the securities are made. In addition, U.S. Holders may be subject to U.S. federal income tax on any indirect gain realized on the stock of a Subsidiary PFIC on the sale or disposition of the securities.

Default PFIC Rules Under Section 1291 of the Code

If we are a PFIC, the U.S. federal income tax consequences to a U.S. Holder of the acquisition, ownership, and disposition of the securities will depend on whether such U.S. Holder makes a "qualified electing fund" or "QEF" election (a "QEF Election") or makes a mark-to-market election under Section 1296 of the Code (a "Mark-to-Market Election") with respect to the common shares, pre-funded warrants, the Warrant Shares or Pre-Funded Shares. A U.S. Holder that does not make either a QEF Election or a Mark-to-Market Election (a "Non-Electing U.S. Holder") will be taxable as described below.

A Non-Electing U.S. Holder will be subject to the rules of Section 1291 of the Code with respect to (a) any gain recognized on the sale or other taxable disposition of the securities and (b) any excess distribution received on the securities. A distribution generally will be an "excess distribution" to the extent that such distribution (together with all other distributions received in the current tax year) exceeds 125% of the average distributions received during the three preceding tax years (or during a U.S. Holder's holding period for the securities, if shorter).

Under Section 1291 of the Code, any gain recognized on the sale or other taxable disposition of the securities of a PFIC (including an indirect disposition of shares of a Subsidiary PFIC), and any excess distribution received on such securities (or a distribution by a Subsidiary PFIC to its shareholder that is deemed to be received by a U.S. Holder) must be ratably allocated to each day in a Non-Electing U.S. Holder's holding period for the securities. The amount of any such gain or excess distribution allocated to the tax year of disposition or distribution of the excess distribution and to years before the entity became a PFIC, if any, would be taxed as ordinary income (and not eligible for certain preferential tax rates, as discussed below). The amounts allocated to any other tax year would be subject to U.S. federal income tax at the highest tax rate applicable to ordinary income in each such year, and an interest charge would be imposed on the tax liability for each such year, calculated as if such tax liability had been due in each such year. A Non-Electing U.S. Holder that is not a corporation must treat any such interest paid as "personal interest," which is not deductible.

If we are a PFIC for any tax year during which a Non-Electing U.S. Holder holds the securities, it will continue to be treated as a PFIC with respect to such Non-Electing U.S. Holder, regardless of whether it ceases to be a PFIC in one or more subsequent tax years. If we cease to be a PFIC, a Non-Electing U.S. Holder may terminate this deemed PFIC status with respect to the common shares, pre-funded warrants, Warrant Shares and the Pre-Funded Warrant Shares by electing to recognize gain (which will be taxed under the rules of Section 1291 of the Code as discussed above) as if such securities were sold on the last day of the last tax year for which we were a PFIC. No such election, however, may be made with respect to the Common Share Purchase Warrants.

Under proposed Treasury Regulations, if a U.S. holder has an option, warrant, or other right to acquire stock of a PFIC (such as the Common Share Purchase Warrants), such option, warrant or right is considered to be PFIC stock subject to the default rules of Section 1291 of the Code. Under rules described below, the holding period for the Warrant Shares will begin on the date a U.S. Holder acquires the related Common Share Purchase Warrant. This will impact the availability of the QEF Election and Mark-to-Market Election with respect to the Warrant Shares. Thus, a U.S. Holder will have to account for the Warrant Shares, common shares and pre-funded warrants under the PFIC rules and the applicable elections differently.

QEF Election

A U.S. Holder that makes a QEF Election for the first tax year in which its holding period of its common shares or pre-funded warrants begins generally will not be subject to the rules of Section 1291 of the Code discussed above with respect to its common shares or pre-funded warrants. However, a U.S. Holder that makes a QEF Election will be subject to U.S. federal income tax on such U.S. Holder's pro rata share of (a) our net capital gain, which will be taxed as long-term capital gain to such U.S. Holder, and (b) our ordinary earnings, which will be taxed as ordinary income to such U.S. Holder. Generally, "net capital gain" is the excess of (a) net long-term capital gain over (b) net short-term capital loss, and "ordinary earnings" are the excess of (a) "earnings and profits" over (b) net capital gain. A U.S. Holder that makes a QEF Election will be subject to U.S. federal income tax on such amounts for each tax year in which we are a PFIC, regardless of whether such amounts are actually distributed to such U.S. Holder by us. However, for any tax year in which we are a PFIC and have no net income or gain, U.S. Holders that have made a QEF Election would not have any income inclusions as a result of the QEF Election. If a U.S. Holder that made a QEF Election has an income inclusion, such a U.S. Holder may, subject to certain limitations, elect to defer payment of current U.S. federal income tax on such amounts, subject to an interest charge. If such U.S. Holder is not a corporation, any such interest paid will be treated as "personal interest," which is not deductible.

A U.S. Holder that makes a timely QEF Election generally (a) may receive a tax-free distribution from us to the extent that such distribution represents "earnings and profits" that were previously included in income by the U.S. Holder because of such QEF Election and (b) will adjust such U.S. Holder's tax basis in the common shares or pre-funded warrants to reflect the amount included in income or allowed as a tax-free distribution because of such QEF Election. In addition, a U.S. Holder that makes a QEF Election generally will recognize capital gain or loss on the sale or other taxable disposition of common shares or pre-funded warrants.

The procedure for making a QEF Election, and the U.S. federal income tax consequences of making a QEF Election, will depend on whether such QEF Election is timely. A QEF Election will be treated as "timely" for purposes of avoiding the default PFIC rules discussed above if such QEF Election is made for the first year in the U.S. Holder's holding period for the common shares or pre-funded warrants in which we were a PFIC. A U.S. Holder may make a timely QEF Election by filing the appropriate QEF Election documents at the time such U.S. Holder files a U.S. federal income tax return for such year.

A QEF Election will apply to the tax year for which such QEF Election is made and to all subsequent tax years, unless such QEF Election is invalidated or terminated or the IRS consents to revocation of such QEF Election. If a U.S. Holder makes a QEF Election and, in a subsequent tax year, we cease to be a PFIC, the QEF Election will remain in effect (although it will not be applicable) during those tax years in which we are not a PFIC. Accordingly, if we become a PFIC in another subsequent tax year, the QEF Election will be effective and the U.S. Holder will be subject to the QEF rules described above during any subsequent tax year in which we qualify as a PFIC.

As discussed above, under proposed Treasury Regulations, if a U.S. holder has an option, warrant or other right to acquire stock of a PFIC (such as the Common Share Purchase Warrants), such option, warrant or right is considered to be PFIC stock subject to the default rules of Section 1291 of the Code. However, a U.S. Holder of an option, warrant or other right to acquire stock of a PFIC may not make a QEF Election that will apply to the option, warrant or other right to acquire PFIC stock. In addition, under proposed Treasury Regulations, if a U.S. Holder holds an option, warrant or other right to acquire stock of a PFIC, the holding period with respect to shares of stock of the PFIC acquired upon exercise of such option, warrant or other right will include the period that the option, warrant or other right was held.

Consequently, under the proposed Treasury Regulations, if a U.S. Holder of the common shares or pre-funded warrants makes a QEF Election, such election generally will not be treated as a timely QEF Election with respect to Warrant Shares and the rules of Section 1291 of the Code discussed above will continue to apply with respect to such U.S. Holder's Warrant Shares. However, a U.S. Holder of Warrant Shares should be eligible to make a timely QEF Election if such U.S. Holder makes a "purging" or "deemed sale" election to recognize gain (which will be taxed under the rules of Section 1291 of the Code discussed above) as if such Warrant Shares were sold for fair market value. As a result of the "purging" or "deemed sale" election, the U.S. Holder will have a new basis and holding period in the Warrant Shares acquired upon the exercise of the Common Share Purchase Warrants for purposes of the PFIC rules. In addition, gain recognized on the sale or other taxable disposition (other than by exercise) of the Common Share Purchase Warrants by a U.S. Holder will be subject to the rules of Section 1291 of the Code discussed above. Each U.S. Holder should consult its own tax advisor regarding the application of the PFIC rules to the securities.

Upon the exercise of a pre-funded warrant, a U.S. Holder may be required to make a new QEF Election with respect to the Pre-Funded Warrant Shares received. Each U.S. Holder should consult its own tax advisor regarding the application of the QEF Election rules to the pre-funded warrants and Pre-Funded Warrant Shares.

U.S. Holders should be aware that, for each tax year, if any, that we are a PFIC, we can provide no assurances that we will satisfy the record keeping requirements of a PFIC, or that we will make available to U.S. Holders the information such U.S. Holders require to make a QEF Election with respect to us or any Subsidiary PFIC, and as a result, a QEF Election may not be available to U.S. Holders. U.S. Holders should consult with their own tax advisors regarding the potential application of the PFIC rules to the ownership and disposition of the securities, and the availability of certain U.S. tax elections under the PFIC rules.

A U.S. Holder makes a QEF Election by attaching a completed IRS Form 8621, including a PFIC Annual Information Statement, to a timely filed U.S. federal income tax return. However, if we do not provide the required information with regard to us or any of our Subsidiary PFICs, U.S. Holders will not be able to make a QEF Election for such entity and will continue to be subject to the rules of Section 1291 of the Code discussed above that apply to Non-Electing U.S. Holders with respect to the taxation of gains and excess distributions.

Mark-to-Market Election

A U.S. Holder may make a Mark-to-Market Election with respect to the common shares, Warrant Shares and Pre-Funded Warrant Shares only if such shares are marketable stock. The common shares, Warrant Shares and Pre-Funded Warrant Shares generally will be "marketable stock" if the common shares, Warrant Shares and Pre-Funded Warrant Shares are regularly traded on (a) a national securities exchange that is registered with the SEC, (b) the national market system established pursuant to Section 11A of the U.S. Exchange Act or (c) a foreign securities exchange that is regulated or supervised by a governmental authority of the country in which the market is located, provided that (i) such foreign exchange has trading volume, listing, financial disclosure, and other requirements and the laws of the country in which such foreign exchange is located, together with the rules of such foreign exchange, ensure that such requirements are actually enforced and (ii) the rules of such foreign exchange ensure active trading of listed stocks. If such stock is traded on such a qualified exchange or other market, such stock generally will be considered "regularly traded" for any calendar year during which such stock is traded, other than in de minimis quantities, on at least 15 days during each calendar quarter. Provided that the common shares, Warrant Shares and Pre-Funded Warrant Shares are "regularly traded" as described in the preceding sentence, such shares are expected to be marketable stock. There can be no assurance that the common shares will be "regularly traded" in subsequent calendar quarters. U.S. Holders should consult their own tax advisors regarding the marketable stock rules. A Mark-to-Market Election will likely not be available with respect to the Common Share Purchase Warrants and pre-funded warrants.

A U.S. Holder that makes a Mark-to-Market Election with respect to its common shares or pre-funded warrants generally will not be subject to the rules of Section 1291 of the Code discussed above with respect to such common shares or pre-funded warrants. However, if a U.S. Holder does not make a Mark-to-Market Election beginning in the first tax year of such U.S. Holder's holding period for the common shares or pre-funded warrants and such U.S. Holder has not made a timely QEF Election, the rules of Section 1291 of the Code discussed above will apply to certain dispositions of, and distributions on, the common shares or pre-funded warrants.

Any Mark-to-Market Election made by a U.S. Holder for the common shares or pre-funded warrants will also apply to such U.S. Holder's Warrant Shares and Pre-Funded Warrant Shares. As a result, if a Mark-to-Market Election has been made by a U.S. Holder with respect to its common shares, any Warrant Shares received will automatically be marked-to-market in the year of exercise. Because, under the proposed Treasury Regulations, a U.S. Holder's holding period for Warrant Shares includes the period during which such U.S. Holder held the Common Share Purchase Warrants, a U.S. Holder will be treated as making a Mark-to-Market Election with respect to its Warrant Shares after the beginning of such U.S. Holder's holding period for the Warrant Shares unless the Warrant Shares are acquired in the same tax year as the year in which the U.S. Holder acquired its securities. Consequently, the default rules under Section 1291 described above generally will apply to the mark-to-market gain realized in the tax year in which Warrant Shares are received. However, the general mark-to-market rules will apply to subsequent tax years.

A U.S. Holder that makes a Mark-to-Market Election will include in ordinary income, for each tax year in which we are a PFIC, an amount equal to the excess, if any, of (a) the fair market value of the common shares, pre-funded warrants, and any Warrant Shares or Pre-Funded Warrant Shares, as of the close of such tax year over (b) such U.S. Holder's tax basis in such securities. A U.S. Holder that makes a Mark-to-Market Election will be allowed a deduction in an amount

equal to the excess, if any, of (i) such U.S. Holder's adjusted tax basis in the common shares, pre-funded warrants and any Warrant Shares or Pre-Funded Warrant Shares, over (ii) the fair market value of such securities (but only to the extent of the net amount of previously included income as a result of the Mark-to-Market Election for prior tax years).

A U.S. Holder that makes a Mark-to-Market Election generally also will adjust such U.S. Holder's tax basis in the common shares, pre-funded warrants, Warrant Shares and Pre-Funded Warrant Shares to reflect the amount included in gross income or allowed as a deduction because of such Mark-to-Market Election. In addition, upon a sale or other taxable disposition of such securities, a U.S. Holder that makes a Mark-to-Market Election will recognize ordinary income or ordinary loss (not to exceed the excess, if any, of (a) the amount included in ordinary income because of such Mark-to-Market Election for prior tax years over (b) the amount allowed as a deduction because of such Mark-to-Market Election for prior tax years).

A U.S. Holder makes a Mark-to-Market Election by attaching a completed IRS Form 8621 to a timely filed U.S. federal income tax return. A timely Mark-to-Market Election applies to the tax year in which such Mark-to-Market Election is made and to each subsequent tax year, unless the securities cease to be "marketable stock" or the IRS consents to revocation of such election. Each U.S. Holder should consult its own tax advisor regarding the availability of, and procedure for making, a Mark-to-Market Election.

Although a U.S. Holder may be eligible to make a Mark-to-Market Election with respect to the common shares, pre-funded warrants, Warrant Shares and Pre-Funded Warrant Shares, no such election may be made with respect to the stock of any Subsidiary PFIC that a U.S. Holder is treated as owning because such stock is not marketable. Hence, the Mark-to-Market Election will not be effective to eliminate the interest charge and other income inclusion rules described above with respect to deemed dispositions of Subsidiary PFIC stock or distributions from a Subsidiary PFIC to its shareholder.

Other PFIC Rules

Under Section 1291(f) of the Code, the IRS has issued proposed Treasury Regulations that, subject to certain exceptions, would cause a U.S. Holder that had not made a timely QEF Election to recognize gain (but not loss) upon certain transfers of securities that would otherwise be tax-deferred (e.g., gifts and exchanges pursuant to corporate reorganizations). However, the specific U.S. federal income tax consequences to a U.S. Holder may vary based on the manner in which the securities are transferred.

If finalized in their current form, the proposed Treasury Regulations applicable to PFICs would be effective for transactions occurring on or after April 1, 1992. Because the proposed Treasury Regulations have not yet been adopted in final form, they are not currently effective, and there is no assurance that they will be adopted in the form and with the effective date proposed. Nevertheless, the IRS has announced that, in the absence of final Treasury Regulations, taxpayers may apply reasonable interpretations of the Code provisions applicable to PFICs and that it considers the rules set forth in the proposed Treasury Regulations to be reasonable interpretations of those Code provisions. The PFIC rules are complex, and the implementation of certain aspects of the PFIC rules requires the issuance of Treasury Regulations which in many instances have not been promulgated and which, when promulgated, may have retroactive effect. U.S. Holders should consult their own tax advisors about the potential applicability of the proposed Treasury Regulations.

Certain additional adverse rules will apply with respect to a U.S. Holder if we are a PFIC, regardless of whether such U.S. Holder makes a QEF Election. For example under Section 1298(b)(6) of the Code, a U.S. Holder that uses the securities as security for a loan will, except as may be provided in Treasury Regulations, be treated as having made a taxable disposition of such securities.

In addition, a U.S. Holder who acquires securities from a decedent will not receive a "step up" in tax basis of such securities to fair market value.

Special rules also apply to the amount of foreign tax credit that a U.S. Holder may claim on a distribution from a PFIC. Subject to such special rules, foreign taxes paid with respect to any distribution in respect of stock in a PFIC are generally eligible for the foreign tax credit. The rules relating to distributions by a PFIC and their eligibility for the foreign tax credit are complicated, and a U.S. Holder should consult with their own tax advisor regarding the availability of the foreign tax credit with respect to distributions by a PFIC.

The PFIC rules are complex, and each U.S. Holder should consult its own tax advisor regarding the PFIC rules (including the applicability and advisability of a QEF Election and Mark-to-Market Election) and how the PFIC rules may affect the U.S. federal income tax consequences of the acquisition, ownership, and disposition of the securities.

U.S. Federal Income Tax Consequences of the Exercise and Disposition of Common Share Purchase Warrants

The following discussion describes the general rules applicable to the ownership and disposition of the Common Share Purchase Warrants but is subject in its entirety to the special rules described above under the heading "Passive Foreign Investment Company Rules."

Exercise of Common Share Purchase Warrants

A U.S. Holder should not recognize gain or loss on the exercise of a Common Share Purchase Warrant and related receipt of a Warrant Share (unless cash is received in lieu of the issuance of a fractional Warrant Share). A U.S. Holder's initial tax basis in the Warrant Share received on the exercise of a Common Share Purchase Warrant should be equal to the sum of (a) such U.S. Holder's tax basis in such Warrant plus (b) the exercise price paid by such U.S. Holder on the exercise of such Common Share Purchase Warrant. It is unclear whether a U.S. Holder's holding period for the Warrant Share received on the exercise of a Common Share Purchase Warrant would commence on the date of exercise of the Common Share Purchase Warrant or the day following the date of exercise of the Common Share Purchase Warrant. If we are a PFIC, a U.S. Holder's holding period for the Warrant Share for PFIC purposes will begin on the date on which such U.S. Holder acquired its Common Share Purchase Warrant.

Disposition of Common Share Purchase Warrants

A U.S. Holder will recognize gain or loss on the sale or other taxable disposition of a Common Share Purchase Warrant in an amount equal to the difference, if any, between (a) the amount of cash plus the fair market value of any property received and (b) such U.S. Holder's tax basis in the Common Share Purchase Warrant sold or otherwise disposed of. Subject to the PFIC rules discussed above, any such gain or loss generally will be a capital gain or loss, which will be long-term capital gain or loss if the Common Share Purchase Warrant is held for more than one year. Deductions for capital losses are subject to complex limitations under the Code.

Expiration of Common Share Purchase Warrants Without Exercise

Upon the lapse or expiration of a Common Share Purchase Warrant, a U.S. Holder will recognize a loss in an amount equal to such U.S. Holder's tax basis in the Common Share Purchase Warrant. Any such loss generally will be a capital loss and will be long-term capital loss if the Common Share Purchase Warrants are held for more than one year. Deductions for capital losses are subject to complex limitations under the Code.

Certain Adjustments to the Common Share Purchase Warrants

Under Section 305 of the Code, an adjustment to the number of Warrant Shares that will be issued on the exercise of the Common Share Purchase Warrants, or an adjustment to the exercise price of the Common Share Purchase Warrants, may be treated as a constructive distribution to a U.S. Holder of the Common Share Purchase Warrants if, and to the extent that, such adjustment has the effect of increasing such U.S. Holder's proportionate interest in the "earnings and profits" or our assets, depending on the circumstances of such adjustment (for example, if such adjustment is to compensate for a distribution of cash or other property to the shareholders). Adjustments to the exercise price of Common Share Purchase Warrants made pursuant to a bona fide reasonable adjustment formula that has the effect of preventing dilution of the interest of the holders of the Common Share Purchase Warrants should generally not be considered to result in a constructive distribution. Any such constructive distribution would be taxable whether or not there is an actual distribution of cash or other property. (See more detailed discussion of the rules applicable to distributions made by us at "Distributions on the Common Shares, Pre-Funded Warrants, Warrant Shares and Pre-Funded Warrant Shares" below).

General Rules Applicable to U.S. Federal Income Tax Consequences of the Acquisition, Ownership, and Disposition of the Common Shares, Pre-Funded Warrants, Warrant Shares and Pre-Funded Warrant Shares

The following discussion describes the general rules applicable to the ownership and disposition of the common shares, pre-funded warrants, Warrant Shares and Pre-Funded Warrant Shares, but is subject in its entirety to the special rules described above under the heading "Passive Foreign Investment Company Rules."

Distributions on the Common Shares, Pre-Funded Warrants, Warrant Shares and Pre-Funded Warrant Shares.

A U.S. Holder that receives a distribution, including a constructive distribution, with respect to a common share, pre-funded warrant, Warrant Share or Pre-Funded Warrant Share (as well as any constructive distribution on a Common Share Purchase Warrant as described above) will be required to include the amount of such distribution in gross income as a dividend (without reduction for any Canadian income tax withheld from such distribution) to the extent of our current and accumulated "earnings and profits", as computed under U.S. federal income tax principles. A dividend generally will be taxed to a U.S. Holder at ordinary income tax rates if we are a PFIC for the tax year of such distribution or the preceding tax year. To the extent that a distribution exceeds our current and accumulated "earnings and profits," such distribution will be treated first as a tax-free return of capital to the extent of a U.S. Holder's tax basis in such securities and thereafter as gain from the sale or exchange of such securities (see "Sale or Other Taxable Disposition of the Common Shares, Pre-Funded Warrants, Warrant Shares and/or Pre-Funded Warrant Shares" below). However, we may not maintain the calculations of earnings and profits in accordance with U.S. federal income tax principles, and each U.S. Holder may be required to assume that any distribution by us with respect to such securities will constitute ordinary dividend income. Dividends received on such securities generally will not be eligible for the "dividends received deduction" generally applicable to corporations. Subject to applicable limitations and provided we are eligible for the benefits of the Convention Between Canada and the United States of America with Respect to Taxes on Income and on Capital, signed September 26, 1980, as amended, or the common shares are readily tradable on a United States securities market, dividends paid by us to non-corporate U.S. Holders, including individuals, generally will be eligible for the preferential tax rates applicable to long-term capital gains for dividends, provided certain holding period and other conditions are satisfied, including that we not be classified as a PFIC in the tax year of distribution or in the preceding tax year. The dividend rules are complex, and each U.S. Holder should consult its own tax advisor regarding the application of such rules.

Sale or Other Taxable Disposition of the Common Shares, Pre-Funded Warrants, Warrant Shares and/or Pre-Funded Warrant Shares

Upon the sale or other taxable disposition of the common shares, pre-funded warrants, Warrant Shares or Pre-Funded Warrant Shares, a U.S. Holder generally will recognize capital gain or loss in an amount equal to the difference between (a) the amount of cash plus the fair market value of any property received and (b) such U.S. Holder's tax basis in such securities sold or otherwise disposed of. Gain or loss recognized on such sale or other taxable disposition generally will be long-term capital gain or loss if, at the time of the sale or other taxable disposition, such securities have been held for more than one year. Preferential tax rates may apply to long-term capital gain of a U.S. Holder that is an individual, estate, or trust. There are no preferential tax rates for long-term capital gain of a U.S. Holder that is a corporation. Deductions for capital losses are subject to significant limitations under the Code.

Additional Tax Considerations

Receipt of Foreign Currency

The amount of any distribution paid to a U.S. Holder in foreign currency or on the sale, exchange or other taxable disposition of the securities generally will be equal to the U.S. dollar value of such foreign currency based on the exchange rate applicable on the date of receipt (regardless of whether such foreign currency is converted into U.S. dollars at that time). If the foreign currency received is not converted into U.S. dollars on the date of receipt, a U.S. Holder will have a tax basis in the foreign currency equal to its U.S. dollar value on the date of receipt. Any U.S. Holder who receives payment in foreign currency and engages in a subsequent conversion or other disposition of the foreign currency may have a foreign currency exchange gain or loss that would be treated as ordinary income or loss, and generally will be U.S. source income or loss for foreign tax credit purposes. Different rules apply to U.S. Holders who use the accrual method of tax accounting. Each U.S. Holder should consult its own U.S. tax advisor regarding the U.S. federal income tax consequences of receiving, owning, and disposing of foreign currency.

Foreign Tax Credit

Subject to the PFIC rules discussed above, a U.S. Holder that pays (whether directly or through withholding) Canadian income tax with respect to dividends paid on the securities (or with respect to any constructive dividend on the Common Share Purchase Warrants) generally will be entitled, at the election of such U.S. Holder, to receive either a deduction or a credit for such Canadian income tax paid. Generally, a credit will reduce a U.S. Holder's U.S. federal income tax liability on a dollar-for-dollar basis, whereas a deduction will reduce a U.S. Holder's income subject to U.S. federal income tax. This election is made on a year-by-year basis and applies to all foreign taxes paid or accrued (whether directly or through withholding) by a U.S. Holder during a year. The foreign tax credit rules are complex and involve the application of rules that depend on a U.S. Holder's particular circumstances. Accordingly, each U.S. Holder should consult its own tax advisor regarding the foreign tax credit rules.

Information Reporting; Backup Withholding Tax

Under U.S. federal income tax laws certain categories of U.S. Holders must file information returns with respect to their investment in, or involvement in, a foreign corporation. For example, U.S. return disclosure obligations (and related penalties) are imposed on U.S. Holders that hold certain specified foreign financial assets in excess of certain threshold amounts. The definition of specified foreign financial assets includes not only financial accounts maintained in foreign financial institutions, but also, unless held in accounts maintained by a financial institution, any stock or security issued by a non-U.S. person. U. S. Holders may be subject to these reporting requirements unless the securities are held in an account at certain financial institutions. Penalties for failure to file certain of these information returns are substantial. U.S. Holders should consult their own tax advisors regarding the requirements of filing information returns, including the requirement to file IRS Form 8938.

Payments made within the U.S., or by a U.S. payor or U.S. middleman, of dividends on, and proceeds arising from the sale or other taxable disposition of the securities generally may be subject to information reporting and backup withholding tax, currently at the rate of 24%, if a U.S. Holder (a) fails to furnish its correct U.S. taxpayer identification number (generally on Form W-9), (b) furnishes an incorrect U.S. taxpayer identification number, (c) is notified by the IRS that such U.S. Holder has previously failed to properly report items subject to backup withholding tax, or (d) fails to certify, under penalty of perjury, that it has furnished its correct U.S. taxpayer identification number and that the IRS has not notified such U.S. Holder that it is subject to backup withholding tax. However, certain exempt persons, such as U.S. Holders that are corporations, generally are excluded from these information reporting and backup withholding tax rules. Any amounts withheld under the U.S. backup withholding tax rules will be allowed as a credit against a U.S. Holder's U.S. federal income tax liability, if any, or will be refunded, if such U.S. Holder furnishes required information to the IRS in a timely manner.

The discussion of reporting requirements set forth above is not intended to constitute a complete description of all reporting requirements that may apply to a U.S. Holder. A failure to satisfy certain reporting requirements may result in an extension of the time period during which the IRS can assess a tax and, under certain circumstances, such an extension may apply to assessments of amounts unrelated to any unsatisfied reporting requirement. Each U.S. Holder should consult its own tax advisors regarding the information reporting and backup withholding rules.

THE ABOVE SUMMARY IS NOT INTENDED TO CONSTITUTE A COMPLETE ANALYSIS OF ALL TAX CONSIDERATIONS APPLICABLE TO U.S. HOLDERS WITH RESPECT TO THE ACQUISITION, OWNERSHIP, AND DISPOSITION OF THE SECURITIES. U.S. HOLDERS SHOULD CONSULT THEIR OWN TAX ADVISORS AS TO THE TAX CONSIDERATIONS APPLICABLE TO THEM IN THEIR OWN PARTICULAR CIRCUMSTANCES.

UNDERWRITING

A.G.P./Alliance Global Partners is acting as the representative of the underwriters and the sole book-running manager in this offering. We have entered into an underwriting agreement dated , 2021 with the representative. Subject to the terms and conditions of the underwriting agreement, we have agreed to sell to each underwriter named below and each underwriter named below has severally and not jointly agreed to purchase from us, at the respective public offering price less the underwriting discounts and commissions set forth on the cover page of this prospectus, our common share units and pre-funded warrant units listed next to its name in the following table:

Underwriter	Number of Common Share Units	Number of Pre-Funded Warrant Units	Total
A.G.P./Alliance Global Partners			
Total			

The underwriters are committed to purchase all the securities we are offering other than those covered by the over-allotment option to purchase additional securities described below, if they purchase any common share units or pre-funded warrant units. The obligations of the underwriters may be terminated upon the occurrence of certain events specified in the underwriting agreement. Furthermore, pursuant to the underwriting agreement, the underwriters' obligations are subject to customary conditions and representations and warranties contained in the underwriting agreement, such as receipt by the underwriters of officers' certificates and legal opinions.

We have agreed to indemnify the underwriters against specified liabilities, including liabilities under the Securities Act, and to contribute to payments the underwriters may be required to make in respect thereof.

The underwriters are offering the common share units and/or pre-funded warrant units, subject to prior sale, when, as and if issued to and accepted by them, subject to approval of legal matters by their counsel and other conditions specified in the underwriting agreement. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Over-allotment Option to Purchase Additional Securities

Pursuant to the underwriting agreement, we have granted the underwriters an option, exercisable for up to 45 days from the date of this prospectus, to purchase up to additional common shares and/or Common Share Purchase Warrants (15% of the common shares and common shares underlying pre-funded warrants and accompanying Common Share Purchase Warrants sold in this offering) at the public offering price set forth on the cover page hereto, less the underwriting discounts and commissions. The underwriters may exercise the option solely to cover over-allotments, if any, made in connection with this offering. If any additional common shares and accompanying Common Share Purchase Warrants are purchased pursuant to the over-allotment option, the underwriters will offer these common shares and accompanying Common Share Purchase Warrants on the same terms as those on which the other securities are being offered. If this over-allotment option is exercised in full, the total gross proceeds will be approximately US$ million and the total net proceeds, after expenses, to us will be approximately US$ million.

Discounts, Commissions and Expense Reimbursement

The following table shows the public offering price, underwriting discount and proceeds, before expenses, to us. The information assumes either no exercise or full exercise by the underwriters of their over-allotment option to purchase additional securities.

	Per Common Share Unit	Per Pre-Funded Warrant Unit	Total Without Over-Allotment	Total With Over-Allotment
Public offering price				
Underwriting discounts and commissions (7%)				
Proceeds, before expenses, to us.				

The underwriters propose to offer the common share units and/or pre-funded warrant units offered by us to the public at the public offering price per respective common share unit and/or pre-funded warrant unit set forth on the cover of this prospectus. In addition, the underwriters may offer some of the common share units and/or pre-funded

warrant units to other securities dealers at such price less a concession of up to US$ per common share unit and US$ per pre-funded warrant unit.

If all of the common share units and/or pre-funded warrant units offered by us are not sold at the respective public offering prices per common share unit and pre-funded warrant unit, the underwriters may change the offering price per common share unit and pre-funded warrant unit and other selling terms by means of a supplement to this prospectus.

We have also agreed to reimburse certain of the representative's accountable expenses not to exceed US$80,000 in the aggregate, and non-accountable expenses not to exceed 1% of the aggregate gross proceeds of this offering.

We estimate that the total expenses of the offering payable by us, excluding the total underwriting discounts, commissions and underwriter expense reimbursement, will be approximately US$ million.

Lock-Up Agreements

For a period of 90 days after the date of this prospectus, subject to certain exceptions, we have agreed with the underwriters not to offer for sale, issue or sell, or register for offer or sale, any of our common shares or any other shares of our capital stock or file or cause to be filed with the SEC any registration statement relating to the offering of any of our securities. In addition, all of our directors, executive officers, and certain of our stockholders have entered into lock-up agreements with the representative prior to the commencement of this offering pursuant to which each of these persons, for a period of 90 days from the closing date of this offering, without the prior written consent of the representative, agree not to (1) offer, sell, assign, transfer, pledge, contract to sell, or otherwise dispose of, or announce the intention to otherwise dispose of, any of our common shares or any securities convertible into or exercisable or exchangeable for our common shares whether now owed or hereafter acquired or with respect to which the director or executive officer has or hereafter acquires the power of disposition; (2) enter into any swap, hedge or similar agreement or arrangement that transfers in whole or in part, the economic risk of ownership of such securities; or (3) engage in any short selling of such securities.

Underwriter Warrants

Upon closing of this offering, we will issue to A.G.P. a compensation warrant entitling A.G.P. or its designees to purchase shares of our common shares (equal to up to 5.0% of the aggregate number of the common shares and common shares issuable upon exercise of the pre-funded warrants that we issue in this offering), subject to any reductions necessary to comply with the rules and regulations of the Financial Industry Regulatory Authority, Inc., or FINRA. This warrant will be exercisable at any time and from time to time, in whole or in part, during the four and one-half year period commencing six months from the effective date of the registration statement of which this prospectus forms a part, at a price of US$ per common share. The warrant will provide for registration rights for the shares underlying the warrant, pursuant to FINRA Rule 5110(f)(2)G), including a one-time demand registration right and piggyback rights for period of not more than seven years, as well as contain customary anti-dilution provisions. Pursuant to FINRA Rule 5110(g), the underwriter warrants and any shares issued upon exercise of the underwriter warrants shall not be sold, transferred, assigned, pledged, or hypothecated, or be the subject of any hedging, short sale, derivative, put or call transaction that would result in the effective economic disposition of the securities by any person for a period of 180 days immediately following the date of effectiveness or commencement of sales of this offering, except the transfer of any security: (i) by operation of law or by reason of our reorganization; (ii) to any FINRA member firm participating in the offering and the officers or partners thereof, if all securities so transferred remain subject to the lock-up restriction set forth above for the remainder of the time period; (iii) if the aggregate amount of our securities held by the underwriter or related persons do not exceed 1% of the securities being offered; (iv) that is beneficially owned on a pro rata basis by all equity owners of an investment fund, provided that no participating member manages or otherwise directs investments by the fund and the participating members in the aggregate do not own more than 10% of the equity in the fund; or (v) the exercise or conversion of any security, if all securities remain subject to the lock-up restriction set forth above for the remainder of the time period.

Right of First Refusal

Subject to certain conditions, we granted the representative, for a period of nine months after the date of the consummation of our business combination, a right of first refusal to act as sole investment banker, sole book-runner, and/or sole placement agent, at the representative's sole discretion, for each and every future public and private equity

and debt offering, including all equity linked financings for us or any of our successors or subsidiaries. In accordance with FINRA Rule 5110(g)(6)(A), such right of first refusal shall not have a duration of more than three years from the effective date of the registration statement of which this prospectus forms a part.

Electronic Offer, Sale and Distribution of Securities

A prospectus in electronic format may be made available on the websites maintained by one or more of the underwriters or selling group members, if any, participating in this offering and one or more of the underwriters participating in this offering may distribute prospectuses electronically. The representative may agree to allocate a number of common share units and pre-funded warrant units to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the underwriters and selling group members that will make internet distributions on the same basis as other allocations. Other than the prospectus in electronic format, the information on these websites is not part of, nor incorporated by reference into, this prospectus or the registration statement of which this prospectus forms a part, has not been approved or endorsed by us or any underwriter in its capacity as underwriter, and should not be relied upon by investors.

The Listing

We have applied or intend to apply to list our common shares on under the proposed symbol "XRTX". We do not intend to apply for listing of the pre-funded warrants or the Common Share Purchase Warrants on any securities exchange or other nationally recognized trading system.

Stabilization

In connection with this offering, the underwriters may engage in stabilizing transactions, over-allotment transactions, syndicate-covering transactions, penalty bids and purchases to cover positions created by short sales. Stabilizing transactions permit bids to purchase shares so long as the stabilizing bids do not exceed a specified maximum, and are engaged in for the purpose of preventing or retarding a decline in the market price of the shares while the offering is in progress.

Over-allotment transactions involve sales by the underwriters of shares in excess of the number of shares the underwriters are obligated to purchase. This creates a syndicate short position that may be either a covered short position or a naked short position. In a covered short position, the number of shares over-allotted by the underwriters is not greater than the number of shares in the over-allotment option. In a naked short position, the number of shares involved is greater than the number of shares in the over-allotment option. The underwriters may close out any short position by exercising their option to purchase additional common shares and accompanying Common Share Purchase Warrants or pre-funded warrants and accompanying Common Share Purchase Warrants and/or purchasing common shares and accompanying Common Share Purchase Warrants or pre-funded warrants and accompanying Common Share Purchase Warrants in the open market.

Syndicate covering transactions involve purchases of shares in the open market after the distribution has been completed in order to cover syndicate short positions. In determining the source of shares to close out the short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared with the price at which they may purchase shares through exercise of the over-allotment option. If the underwriters sell more shares than could be covered by exercise of the over-allotment option and, therefore, have a naked short position, the position can be closed out only by buying shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that after pricing there could be downward pressure on the price of the shares in the open market that could adversely affect investors who purchase in the offering.

Penalty bids permit the representative to reclaim a selling concession from a syndicate member when the shares originally sold by that syndicate member are purchased in stabilizing or syndicate covering transactions to cover syndicate short positions.

These stabilizing transactions, syndicate covering transactions and penalty bids may have the effect of raising or maintaining the market price of our common shares or preventing or retarding a decline in the market price of our common shares. As a result, the price of our common shares in the open market may be higher than it would otherwise be in the absence of these transactions. Neither we nor the underwriters make any representation or prediction as to the effect that the transactions described above may have on the price of our common shares. These transactions may

be effected on the Nasdaq Capital Market or NYSE American, in the over-the-counter market or otherwise and, if commenced, may be discontinued at any time.

Passive Market Making

In connection with this offering, underwriters and selling group members may engage in passive market making transactions in our common shares on the Nasdaq Capital Market or NYSE American in accordance with Rule 103 of Regulation M under the Exchange Act, during a period before the commencement of offers or sales of the shares and extending through the completion of the distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker's bid, then that bid must then be lowered when specified purchase limits are exceeded.

Certain Relationships

The underwriters and their affiliates have in the past and may in the future provide various investment banking, commercial banking, financial advisory, brokerage, and other services to us and have and may receive customary fees and expense reimbursement.

The underwriters and their affiliates may, from time to time, engage in transactions with and perform services for us in the ordinary course of their business for which they may receive customary fees and reimbursement of expenses. In the ordinary course of their various business activities, the underwriters and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own accounts and for the accounts of their customers, and such investment and securities activities may involve securities and/or instruments of our company. The underwriters and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Offer Restrictions Outside the United States

This prospectus does not constitute an offer to sell to, or a solicitation of an offer to buy from, anyone in any country or jurisdiction (i) in which such an offer or solicitation is not authorized, (ii) in which any person making such offer or solicitation is not qualified to do so or (iii) in which any such offer or solicitation would otherwise be unlawful. No action has been taken that would, or is intended to, permit a public offer of the securities or possession or distribution of this prospectus or any other offering or publicity material relating to the securities in any country or jurisdiction (other than the United States) where any such action for that purpose is required. Accordingly, the underwriter has undertaken that it will not, directly or indirectly, offer or sell any securities offered hereby or have in its possession, distribute or publish any prospectus, form of application, advertisement or other document or information in any country or jurisdiction except under circumstances that will, to the best of its knowledge and belief, result in compliance with any applicable laws and regulations and all offers and sales of securities by it will be made on the same terms.

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a "Relevant Member State") an offer to the public of any securities may not be made in that Relevant Member State, except that an offer to the public in that Relevant Member State of any securities may be made at any time under the following exemptions under the Prospectus Directive, if they have been implemented in that Relevant Member State:

- to legal entities which are qualified investors as defined under the Prospectus Directive;
- by the underwriters to fewer than 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the representatives of the underwriters for any such offer; or

- in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of our common stock shall result in a requirement for us or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, (1) the expression an "offer of common stock to the public" in relation to any common stock in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and any securities to be offered so as to enable an investor to decide to purchase or subscribe for the common stock, as the same may be varied in that Relevant Member State by any measure implementing the Prospectus Directive in that Relevant Member State, (2) the expression "Prospectus Directive" means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive), and includes any relevant implementing measure in each Relevant Member State and (3) the expression "2010 PD Amending Directive" means Directive 2010/73/EU.

United Kingdom

This prospectus has only been communicated or caused to have been communicated and will only be communicated or caused to be communicated as an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act of 2000 (the "FSMA")) as received in connection with the issue or sale of the common stock in circumstances in which Section 21(1) of the FSMA does not apply to us. All applicable provisions of the FSMA will be complied with in respect to anything done in relation to the common stock in, from or otherwise involving the United Kingdom.

Canada

The securities may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the securities must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Australia

No placement document, prospectus, product disclosure statement or other disclosure document has been lodged with the Australian Securities and Investments Commission in relation to the offering. This prospectus does not constitute a prospectus, product disclosure statement or other disclosure document under the Corporations Act 2001, or the Corporations Act, and does not purport to include the information required for a prospectus, product disclosure statement or other disclosure document under the Corporations Act.

Any offer in Australia of the securities may only be made to persons, or the Exempt Investors, who are "sophisticated investors" (within the meaning of section 708(8) of the Corporations Act), "professional investors" (within the meaning of section 708(11) of the Corporations Act) or otherwise pursuant to one or more exemptions contained in section 708 of the Corporations Act so that it is lawful to offer the securities without disclosure to investors under Chapter 6D of the Corporations Act.

The securities applied for by Exempt Investors in Australia must not be offered for sale in Australia in the period of 12 months after the date of allotment under the offering, except in circumstances where disclosure to investors under Chapter 6D of the Corporations Act would not be required pursuant to an exemption under section 708 of the

Corporations Act or otherwise or where the offer is pursuant to a disclosure document which complies with Chapter 6D of the Corporations Act. Any person acquiring securities must observe such Australian on-sale restrictions.

This prospectus contains general information only and does not take account of the investment objectives, financial situation or needs of any particular person. It does not contain any securities recommendations or financial product advice. Before making an investment decision, investors need to consider whether the information in this prospectus is appropriate to their needs, objectives and circumstances and, if necessary, seek expert advice on those matters.

Switzerland

The securities may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or SIX, or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the securities or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, or the securities have been or will be filed with or approved by any Swiss regulatory authority. This document will not be filed with, and the offer of securities will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA, and the offer of securities has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA. The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of securities.

Dubai International Financial Centre

This prospectus relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority, or DFSA. This prospectus is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents relating to Exempt Offers. The DFSA has not approved this prospectus nor taken steps to verify the information set forth herein and has no responsibility for the prospectus. The securities to which this prospectus relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the securities offered should conduct their own due diligence on the securities. If you do not understand the contents of this prospectus, you should consult an authorized financial advisor.

Hong Kong

The securities have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to “professional investors” as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance or (b) in other circumstances which do not result in the document being a “prospectus” as defined in the Companies Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of that Ordinance. No advertisement, invitation or document relating to the securities has been or may be issued or has been or may be in the possession of any person for the purposes of issue, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to securities which are or are intended to be disposed of only to persons outside Hong Kong or only to “professional investors” as defined in the Securities and Futures Ordinance and any rules made under that Ordinance.

Japan

The securities have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948, as amended) and, accordingly, will not be offered or sold, directly or indirectly, in Japan, or for the benefit of any Japanese Person or to others for re-offering or resale, directly or indirectly, in Japan or to any Japanese Person, except in compliance with all applicable laws, regulations and ministerial guidelines promulgated by relevant Japanese governmental or regulatory authorities in effect at the relevant time. For the purposes of this

paragraph, “Japanese Person” shall mean any person resident in Japan, including any corporation or other entity organized under the laws of Japan.

Israel

This document does not constitute a prospectus under the Israeli Securities Law, 5728-1968, and has not been filed with or approved by the Israel Securities Authority. In Israel, this prospectus may be distributed only to, and is directed only at, investors listed in the first addendum, or the Addendum, to the Israeli Securities Law, consisting primarily of joint investment in trust funds; provident funds; insurance companies; banks; portfolio managers, investment advisors, members of the Tel Aviv Stock Exchange Ltd., underwriters, each purchasing for their own account; venture capital funds; entities with equity in excess of NIS 50 million and “qualified individuals,” each as defined in the Addendum (as it may be amended from time to time), collectively referred to as qualified investors. Qualified investors shall be required to submit written confirmation that they fall within the scope of the Addendum.

EXPENSES RELATED TO THIS OFFERING

The following table sets forth the costs and expenses, other than underwriting discounts and commissions, payable by us in connection with the offer and sale of our common shares in this offering. All amounts listed below are estimates.

Itemized expense	Amount
SEC registration fee	1,976.07
Nasdaq or NYSE listing fee	40,000.00
FINRA filing fee	2,600.00
Printing and engraving expenses	30,000.00
Transfer agent and registrar fees	40,000.00
Legal fees and expenses	500,000.00
Accounting fees and expenses	75,000.00
Total	689,576.07

LEGAL MATTERS

The validity of the securities being offered by this prospectus and other legal matters concerning this offering relating to Canadian law will be passed upon for us by McCarthy Tétrault LLP. Certain legal matters in connection with this offering relating to U.S. law will be passed upon for us by Dorsey & Whitney LLP. Certain legal matters in connection with this offering relating to Canadian law will be passed upon for the underwriters by TingleMerrett LLP. Certain legal matters in connection with this offering relating to U.S. law will be passed upon for the underwriters by Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., New York, New York.

EXPERTS

The consolidated financial statements of XORTX Therapeutics Inc. as of and for the year ended December 31, 2020, have been audited by Smythe LLP, independent registered public accounting firm, as set forth in their report thereon. Smythe LLP is independent with respect to us within the meaning of the Rules of Professional Conduct of the Institute of Chartered Professional Accountants of British Columbia and under all relevant U.S. professional and regulatory standards, including PCAOB Rule 3520. We have included our financial statements in this prospectus and in this registration statement in reliance on the report of Smythe LLP given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form F-1 under the Securities Act, including relevant exhibits and schedules, with respect to the securities to be sold in this offering. This prospectus, which constitutes a part of the registration statement, does not contain all of the information contained in the registration statement. You should read the registration statement and its exhibits for further information with respect to us and the securities. Some of these exhibits consist of documents or contracts that are described in this prospectus in summary form. You should read the entire document or contract for the complete terms. You may read and copy the registration statement and its exhibits at the SEC's Public Reference Room at 100 F Street N.E., Room 1580, Washington, D.C. 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. In addition, the SEC maintains an internet website at www.sec.gov, from which you can electronically access the registration statement and its exhibits.

After this offering, we will be subject to the reporting requirements of the Exchange Act applicable to foreign private issuers. As a foreign private issuer, the SEC's rules do not require us to deliver proxy statements or to file quarterly reports on Form 10-Q, among other things. However, we plan to produce quarterly financial reports and furnish them to the SEC not later than 45 days after the end of each of the first three quarters of our fiscal year and to file our annual report on Form 20-F not later than 90 days after the end of our fiscal year. In addition, our "insiders" are not subject to the SEC's rules regarding insider reporting and prohibiting short-swing trading under Section 16 of the Exchange Act.

We will also be subject to the full informational requirements of the securities commissions in Alberta, British Columbia, and Ontario. You are invited to read and copy any reports, statements or other information, other than confidential filings, that we intend to file with the Canadian provincial and territorial securities commissions. These filings are also electronically available from the Canadian System for Electronic Document Analysis and Retrieval (SEDAR) (http://www.sedar.com), the Canadian equivalent of the SEC's Electronic Document Gathering And Retrieval System. Documents filed on SEDAR are not, and should not be considered, part of this prospectus.

We also maintain a website at www.xortx.com. Information contained in, or accessible through, our website is not a part of this prospectus, and the inclusion of our website address in this prospectus is an inactive textual reference.

DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION

Insofar as indemnification for liabilities arising under the Securities Act, may be permitted to our directors, officers or persons controlling us, we have been advised that it is the SEC's opinion that such indemnification is against public policy as expressed in such act and is, therefore, unenforceable.

INDEX TO FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

TO THE SHAREHOLDERS AND DIRECTORS OF XORTX THERAPEUTICS INC.

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated statements of financial position of Xortx Therapeutics Inc. (the "Company") as of December 31, 2020 and 2019, and the related consolidated statements of comprehensive loss, changes in shareholders' equity (deficiency) and cash flows for the years then ended, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for the years then ended, in conformity with International Financial Reporting Standards ("IFRS"), as issued by the International Accounting Standards Board.

Material Uncertainty Related to Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the consolidated financial statements, the Company incurred a net loss of $1,284,602 during the year ended December 31, 2020 and, as of that date, has an accumulated deficit of $8,037,998. As stated in Note 1, these events or conditions, along with other matters as set forth in Note 1, indicate that a material uncertainty exists that may cast substantial doubt on the Company's ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

Critical audit matters are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. We determined that there are no critical audit matters.

Signed Chartered Professional Accountants

/s/ Smythe LLP

Smythe LLP, Chartered Professional Accountants

Vancouver, Canada
April 23, 2021

We have served as the Company's auditor since 2018.

XORTX THERAPEUTICS INC.
Consolidated Statements of Financial Position
(Expressed in Canadian Dollars)

	Note	December 31, 2020	December 31 2019
		$	$
Assets			
Current			
Cash		171,271	58,614
Funds held in trust		—	70,000
Deposits	**5**	1,826,404	656,324
Accounts receivable and other	**6**	58,466	15,468
Deferred share issuance costs		—	14,842
		2,056,141	815,248
Non-current			
Equipment		—	341
Intangible assets	**7**	234,316	272,388
Total Assets		**2,290,457**	**1,087,977**
Liabilities			
Current			
Accounts payable and accrued liabilities	**8,12**	1,034,213	1,151,475
Provision for patent acquisition	**9**	—	97,410
Liability component on convertible loans	**10**	—	50,813
Total Liabilities		1,034,213	1,299,698
Shareholders' Equity (Deficiency)			
Share capital	**11**	8,258,395	5,863,872
Share-based payments, warrant reserve and other	**11**	1,003,609	607,803
Obligation to issue shares	**7(c)**	32,238	—
Share subscriptions received in advance	**11(b)**	—	70,000
Equity component on convertible loans	**10**	—	5,202
Deficit		(8,037,998)	(6,758,598)
Total Shareholders' Equity (Deficiency)		1,256,244	(211,721)
Total Liabilities and Shareholders' Equity (Deficiency)		**2,290,457**	**1,087,977**

Nature of Operations and Going Concern (Note 1)
Commitments (Note 16)
Subsequent events (Note 17)

/s/ "Allen Davidoff"
Director

/s/ "Paul Van Damme"
Director

The accompanying notes are an integral part of these consolidated financial statements.

XORTX THERAPEUTICS INC.
Consolidated Statements of Comprehensive Loss
For the years ended December 31, 2020 and 2019
(Expressed in Canadian Dollars)

	Note	2020	2019
		$	$
Expenses			
Amortization	**7**	20,439	19,900
Consulting	**12**	102,880	46,561
General and administrative		9,516	17,344
Investor relations		241,177	34,782
Listing fees		52,138	42,495
Professional fees	**12**	162,580	108,427
Research and development		277,455	39,897
Share-based payments	**11(f), 12**	293,443	26,317
Travel		8,460	36,076
Wages and benefits	**12**	227,905	194,166
Loss before other items		(1,395,993)	(565,965)
Accretion		(846)	(1,638)
Foreign exchange gain (loss)		2,961	(26,397)
Interest and other expenses		(12,666)	(35,576)
Impairment of intangible assets	**7**	(64,562)	—
Recovery of provision for patent acquisition	**9**	95,490	—
Forgiveness of debt	**5,10**	91,014	—
Net loss and comprehensive loss for the year		(1,284,602)	(629,576)
Basic and diluted loss per common share		(0.19)	(0.12)
Weighted average number of common shares outstanding			
Basic and diluted		6,664,025	5,359,429

The accompanying notes are an integral part of these consolidated financial statements.

XORTX THERAPEUTICS INC.
Consolidated Statements of Changes in Shareholders' Equity (Deficiency)
For the years ended December 31, 2020 and 2019
(Expressed in Canadian Dollars)

	Note	Number of common shares	Share capital	Reserves	Obligation to issue shares	Share subscriptions received in advance	Equity component on convertible loans	Deficit	Total
		$	$	$	$	$	$	$	$
Balance, December 31, 2018		5,359,429	5,863,872	581,486	—	—	5,202	(6,129,022)	321,538
Share-based payments	**11(f)**	—	—	26,317	—	—	—	—	26,317
Share subscriptions received in advance	**11(b)**	—	—	—	—	70,000	—	—	70,000
Net loss for the year		—	—	—	—	—	—	(629,576)	(629,576)
Balance, December 31, 2019		5,359,429	5,863,872	607,803	—	70,000	5,202	(6,758,598)	(211,721)
Shares issued pursuant to private placement	**11(b)**	1,555,317	2,465,023	91,297	—	(70,000)	—	—	2,486,320
Share issuance costs	**11(b)**	—	(70,500)	11,066	—	—	—	—	(59,434)
Convertible loan debt forgiveness		—	—		—	—	(5,202)	5,202	—
Obligation to issue shares	**7(c)**	—	—	—	32,238	—	—	—	32,238
Share-based payments	**11(f)**	—	—	293,443	—	—	—	—	293,443
Net loss for the year		—	—	—	—	—	—	(1,284,602)	(1,284,602)
Balance, December 31, 2020		**6,914,746**	**8,258,395**	**1,003,609**	**32,238**	**—**	**—**	**(8,037,998)**	**1,256,244**

The accompanying notes are an integral part of these consolidated financial statements.

XORTX THERAPEUTICS INC.
Consolidated Statements of Cash Flows
For the years ended December 31, 2020 and 2019
(Expressed in Canadian Dollars)

	Note	2020 $	2019 $
Cash provided by (used in):			
Operating activities		(1,284,602)	(629,576)
Net loss for the year			
Items not affecting cash:			
Accretion expense		846	1,638
Amortization		20,439	19,900
Forgiveness of debt	**5,10**	(91,014)	—
Share-based payments	**11(e)**	293,443	26,317
Unrealized foreign exchange loss		1,201	34,064
Impairment of intangible assets	**7**	64,562	—
Recovery of provision	**9**	(95,490)	—
Changes in non-cash operating assets and liabilities:			
Funds held in trust	**11(b)**	—	(70,000)
Accounts payable and accrued liabilities		405,212	353,289
Accounts receivable and other		(42,998)	14,788
		(728,401)	(249,580)
Investing activities			
Acquisition of intangibles assets		(14,350)	(7,037)
		(14,340)	(7,037)
Financing activities			
Proceeds from issuance of shares	**11(b)**	900,000	—
Cash share issuance costs	**11(b)**	(44,592)	—
Deferred share issuance costs		—	(14,788)
Share subscriptions received in advance	**11(b)**	—	70,000
		855,408	55,212
Increase (decrease) in cash		112,657	
Cash, beginning of year		58,614	260,019
Cash, end of year		171,271	58,614
Supplemental Cash Flow and Non-Cash Investing and Financing Activities Disclosure			
Cash paid for interest		—	—
Cash paid for income taxes		—	—
Transfer of funds held in trust		70,000	—
Shares issued for deposit		1,606,320	—
Shares issued to settle debt		50,000	—
Obligation to issue shares		32,238	—
Application of Cato deposit against payable	**5**	436,240	—

The accompanying notes are an integral part of these consolidated financial statements.

1. Nature of operations and going concern

XORTX Therapeutics Inc. (the "Company" or "XORTX") was incorporated under the laws of Alberta, Canada on August 24, 2012 under the name ReVasCor Inc. and was continued under the Canada Business Corporations Act on February 27, 2013 under the name of XORTX Pharma Corp. Upon completion of the reverse take-over ("RTO") transaction on January 10, 2018 with APAC Resources Inc. ("APAC"), a company incorporated under the laws of British Columbia, the Company changed its name to "XORTX Therapeutics Inc." and XORTX Pharma Corp. became a wholly-owned subsidiary.

XORTX is a public company listed on the Canadian Securities Exchange (the "CSE") under the symbol "XRX", and the OTCQB Venture Market under the symbol "XRTXF". The Company's operations and mailing address is Suite 4000, 421 - 7th Avenue SW, Calgary, Alberta, T2P 4K9 and its head and registered address is located at Suite 2400, 745 Thurlow Street, Vancouver, British Columbia, V6E 0C5.

XORTX is a bio-pharmaceutical company, dedicated to the development and commercialization of therapies to treat progressive kidney disease modulated by aberrant purine and uric acid metabolism in orphan disease indications such as autosomal dominant polycystic kidney disease, larger market type 2 diabetic nephropathy, and fatty liver disease. The Company's current focus is on developing products to slow and/or reverse the progression of kidney disease in patients at risk of end stage kidney failure.

Although there is no certainty, management is of the opinion that additional funding for future projects and operations can be raised as needed. The Company is subject to a number of risks associated with the successful development of new products and their marketing and the conduct of its clinical studies and their results. The Company will have to finance its research and development activities and its clinical studies. To achieve the objectives in its business plan, the Company plans to raise the necessary capital and to generate revenues. The products developed by the Company will require approval from the U.S. Food and Drug Administration and equivalent organizations in other countries before their sale can be authorized. If the Company is unsuccessful in obtaining adequate financing in the future, research activities will be postponed until market conditions improve. These circumstances and conditions may cast significant doubt about the Company's ability to continue as a going concern.

In March 2020, the World Health Organization declared coronavirus COVID-19 a global pandemic. This contagious disease outbreak, which has continued to spread, and any related adverse public health developments, have adversely affected workforces, economies, and financial markets globally, potentially leading to an economic downturn. It is not possible for the Company to predict the duration or magnitude of the adverse results of the outbreak and its effects on the Company's business or results of operations at this time but may impact the Company's ability to obtain additional financing to support future research projects.

2. Basis of preparation

Statement of Compliance

These consolidated financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB").

Basis of Measurement and Presentation

These consolidated financial statements have been prepared using the historical cost convention using the accrual basis of accounting except for financial instruments which have been measured at fair value. In the opinion of management, all adjustments (including normal recurring accruals), considered necessary for a fair presentation have been included. The accounting policies set out below have been applied consistently to all years presented in these consolidated financial statements.

2. Basis of preparation (continued)

Basis of Measurement and Presentation (continued)

These consolidated financial statements incorporate the financial statements of the Company and its 100% owned subsidiary. The accounts of the Company's subsidiary are prepared for the same reporting period as the parent company, using consistent accounting policies. Inter-company transactions, balances and unrealized gains or losses on transactions are eliminated. The Company's subsidiary is the following:

Name	Place of Incorporation	Ownership Percentage
XORTX Pharma Corp.	Canada	100%

These consolidated financial statements were approved for issue by the Board of Directors on April 23, 2021.

3. Accounting policies

These consolidated financial statements have been prepared using the following accounting policies:

Financial Instruments

a) Classification

The Company classifies its financial instruments in the following categories: at fair value through profit or loss ("FVTPL"), at fair value through other comprehensive income (loss) ("FVTOCI") or at amortized cost. The Company determines the classification of financial assets at initial recognition. The classification of debt instruments is driven by the Company's business model for managing the financial assets and their contractual cash flow characteristics.

Equity instruments that are held for trading are classified as FVTPL. For other equity instruments, on the day of acquisition the Company can make an irrevocable election (on an instrument-by-instrument basis) to designate them as at FVTOCI. Financial liabilities are measured at amortized cost, unless they are required to be measured at FVTPL (such as instruments held for trading or derivatives) or if the Company has opted to measure them at FVTPL.

The following are the Company's financial instruments at December 31, 2020:

	Classification
Cash	FVTPL
Accounts payable and accrued liabilities	amortized cost

b) Measurement

Financial assets at FVTOCI
Elected investments in equity instruments at FVTOCI are initially recognized at fair value plus transaction costs. Subsequently they are measured at fair value, with gains and losses recognized in other comprehensive income (loss).

Financial assets and liabilities at amortized cost
Financial assets and liabilities at amortized cost are initially recognized at fair value plus or minus transaction costs, respectively, and subsequently carried at amortized cost less any impairment.

Financial assets and liabilities at FVTPL
Financial assets and liabilities carried at FVTPL are initially recorded at fair value and transaction costs are expensed in the consolidated statements of net (loss) income. Realized and unrealized gains and losses arising from changes in the fair value of the financial assets and liabilities held at FVTPL are included in the consolidated statements of net (loss) income in the period in which they arise. Where management has opted to recognize a financial liability at FVTPL, any changes associated with the Company's own credit risk will be recognized in other comprehensive income (loss).

3. Accounting policies (continued)

Financial Instruments (continued)

c) Impairment of financial assets at amortized cost

The Company recognizes a loss allowance for expected credit losses on financial assets that are measured at amortized cost.

At each reporting date, the Company measures the loss allowance for the financial asset at an amount equal to the lifetime expected credit losses if the credit risk on the financial asset has increased significantly since initial recognition. If at the reporting date, the financial asset has not increased significantly since initial recognition, the Company measures the loss allowance for the financial asset at an amount equal to the twelve month expected credit losses. The Company shall recognize in the consolidated statements of net (loss) income, as an impairment gain or loss, the amount of expected credit losses (or reversal) that is required to adjust the loss allowance at the reporting date to the amount that is required to be recognized.

d) Derecognition

Financial assets
The Company derecognizes financial assets only when the contractual rights to cash flows from the financial assets expire, or when it transfers the financial assets and substantially all of the associated risks and rewards of ownership to another entity. Gains and losses on derecognition are generally recognized in the consolidated statements of net (loss) income. However, gains and losses on derecognition of financial assets classified as FVTOCI remain within accumulated other comprehensive income (loss).

Financial liabilities
The Company derecognizes financial liabilities only when its obligations under the financial liabilities are discharged, cancelled or expired. Generally, the difference between the carrying amount of the financial liability derecognized and the consideration paid and payable, including any non-cash assets, is recognized in the consolidated statement of net income (loss).

Research and development costs
Research costs including clinical trial costs are expensed as incurred, net of recoveries until a drug product receives regulatory approval. Development costs that meet specific criteria related to technical, market and financial feasibility will be capitalized. To date, all research and development costs have been expensed.

Intangible assets
Intangible assets are measured at cost less accumulated amortization and accumulated impairment losses. Costs incurred for patents, patents pending and licenses are capitalized and amortized from the date of capitalization on a straight-line basis over the shorter of their respective remaining estimated lives or 20 years.

Government assistance
Amounts received or receivable resulting from government assistance programs, including grants and investment tax credits for research and development, are recognized where there is reasonable assurance that the amount of government assistance will be received and all attached conditions will be complied with. Investment tax credits relating to qualifying scientific research and experimental development expenditures that are recoverable are recognized as a reduction of expenses.

3. Accounting policies (continued)

Financial Instruments (continued)

d) Derecognition (continued)

Impairment of long-lived assets
Intangible assets are tested for impairment when events or changes in circumstances indicate that the carrying amount may not be recoverable. For the purpose of measuring recoverable amounts, assets are grouped at the lowest levels for which there are separately identifiable cash flows (cash-generating units or CGUs). The recoverable amount is the higher of an asset's fair value less costs to sell and value in use (being the present value of the expected future cash flows of the relevant asset or CGU). An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The Company evaluates impairment losses for potential reversals when events or circumstances warrant such consideration.

Convertible loans
Convertible loans are separated into their liability and equity components on the statement of financial position. The liability component is initially recognized at fair value, calculated as the net present value of a similar liability without an associated equity conversion feature and accounted for at amortized cost using the effective interest rate method. The effective interest rate used is the estimated rate for debt with similar terms at the time of issue. The fair value of the equity component (conversion feature) is determined at the time of issue as the difference between the face value of the exchangeable note and the fair value of the liability component.

Share-based payments
The Company has a stock option plan that is described in Note 11 and grants share options to acquire common shares of the Company to directors, officers, employees and consultants. Share-based payments to employees are measured at the fair value of the instruments granted. Share-based payments to non-employees are measured at the fair value of the goods or services received or the fair value of the equity instruments issued as calculated using the Black-Scholes option pricing model. The offset to the recorded expense is to reserve.

Consideration received on the exercise of stock options is recorded as share capital and the recorded amount in reserves is transferred to share capital.

Share capital
Common shares are classified as equity. Costs directly identifiable with share capital financing are charged against share capital. Share issuance costs incurred in advance of share subscriptions are recorded as deferred assets. Share issuance costs related to uncompleted share subscriptions are charged to operations in the period they are incurred.

The Company's common shares, warrants and options are classified as equity instruments. Incremental costs directly related to the issue of new shares or options are shown in equity as a deduction from the proceeds. For equity offerings of units consisting of a common share and warrant, when both instruments are classified as equity, the Company allocates proceeds first to common shares based on the estimated fair value of the common shares at the time the units are issued, with any excess value allocated to warrants.

From time to time in connection with private placements, the Company issues compensatory warrants ("Finders' Warrants") or warrant units ("Finders' Warrant Units") to agents as commission for services. Awards of Finders' Warrants and Finders' Warrant Units are accounted for in accordance with the fair value method of accounting and result in share issue costs and a credit to reserves when Finders' Warrants and Finders' Warrant Units are issued. The fair value of Finders' Warrants is measured using the Black-Scholes option pricing model and the fair value of the Finders' Warrants Units is measured using the Geske compound option pricing model that both requires the use of certain assumptions regarding the risk-free market interest rate, expected volatility in the price of the underlying stock, and expected life of the instruments.

3. Accounting policies (continued)

Financial Instruments (continued)

d) Derecognition (continued)

General provisions
A provision is a liability of uncertain timing or amount of a future expenditure when the Company has a present obligation as a result of a past event, it is probable that an outflow of resources will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. The present value of expected future cash outflows is recognized as a liability and the increase to the liability due to the passage of time is recorded as a finance expense. The Company uses a credit adjusted discount rate that reflects current market assessments of the time value of money and the risk specific to the liability.

Earnings (loss) per common share
Basic earnings (loss) per common share is computed by dividing the net income (loss) available to common shareholders by the weighted average number of common shares outstanding during the period and the diluted loss per share assumes that the outstanding vested stock options and share purchase warrants had been exercised at the beginning of the year. Diluted earnings per share reflect the potential dilution that could share in the earnings of an entity. In the periods where a net loss is incurred, potentially dilutive common shares are excluded from the loss per share calculation as the effect would be anti-dilutive and basic and diluted loss per common share are the same. In a profit year, the weighted average number of common shares outstanding used for the calculation of diluted earnings per share assumes that the proceeds to be received on the exercise of dilutive stock options and warrants are used to repurchase the common shares at the average price per period.

Income taxes
The Company uses the asset and liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled.

Deferred income tax assets also result from unused loss carry forwards, resource related pools and other deductions. A deferred tax asset is recognized for unused tax losses, tax credits and deductible temporary differences to the extent that it is probable that future taxable profits will be available against which they can be utilized. Deferred tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that the related tax benefit will be realized.

Foreign currency translation
The Company's functional and presentation currency is the Canadian dollar. The functional currency of the Company and its subsidiary is the Canadian dollar. Foreign currency transactions are translated into Canadian dollars using the exchange rates prevailing at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies are translated at the rate of exchange in effect as of the financial position date. Gains and losses are recognized in profit or loss on a current basis.

4. Critical accounting judgments and estimates

The preparation of consolidated financial statements requires management to make judgments and estimates that affect the amounts reported in the consolidated financial statements and notes. By their nature, these judgments and estimates are subject to change and the effect on the consolidated financial statements of changes in such judgments and estimates in future periods could be material. These judgments and estimates are based on historical experience, current and future economic conditions, and other factors, including expectations of future events that are believed to be reasonable under the circumstances. Actual results could differ from these judgments and estimates.

Revisions to accounting estimates are recognized in the period in which the estimate is revised and may affect both the period of revision and future periods. Information about critical accounting judgments in applying accounting policies that have the most significant risk of causing material adjustment to the carrying amounts of assets and liabilities recognized in the consolidated financial statements within the next financial year are discussed below:

Share-based payment transactions
The Company measures the cost of equity-settled transactions with employees by reference to the fair value of the equity instruments at the date at which they are granted. Estimating fair value for share-based payment transactions requires determining the most appropriate valuation model, which is dependent on the terms and conditions of the grant. This estimate also requires determining the most appropriate inputs to the valuation model including the expected life of the share option, volatility and dividend yield and making assumptions about them. The assumptions and models used for estimating fair value for share-based payment transactions are disclosed in Note 11.

Impairment of intangible assets
Patents (obtained and pending) and licenses are reviewed for impairment at each financial reporting date. If, in the judgment of management, that future economic benefits will not flow to the Company, then the Company will assess the recoverable value of the asset. If the carrying value is greater than the recoverable value, the asset will be impaired to the recoverable value.

Equity component of convertible loans
The convertible loans are classified as liabilities, with the exception of the portion relating to the conversion feature discount that is being accreted over the term of the debentures, utilizing the effective interest method which approximates the market rate at the date the loans were issued. Management uses its judgment to determine an interest rate that would have been applicable to non-convertible debt at the time the debentures were issued.

Going concern assumption
The preparation of these consolidated financial statements requires management to make judgments regarding the ability of the Company to continue as a going concern as discussed in Note 1.

5. Deposits

During 2018, the Company entered into an agreement with Cato Research Canada Inc. (“Cato”) to manage a planned clinical study. As part of this agreement, the Company paid a deposit of USD $505,331 and has committed to utilize Cato for this clinical study, subject to certain conditions. During the year ended December 31, 2020, Cato agreed to apply $436,240 of the deposit against the accounts payable balance owing to Cato and forgive interest on these balances of $36,234.

During the year ended December 31, 2020, the Company entered into an agreement with Prevail Partners LLC. As part of the agreement, the Company paid a deposit of $1,606,320 through the issuance of units in the private placement (USD $1,200,000 at the exchange rate on date of the transaction) to be applied to future regulatory and clinical trial programs.

(Expressed in Canadian Dollars)

5. Deposits (continued)

The Canadian dollar value of the deposits are shown below:

	December 31 2020 $	December 31 2019 $
Balance, beginning of year	656,324	689,373
Additions	1,606,320	—
Application of deposit against accounts payable	(436,240)	—
Foreign exchange adjustment	—	(33,049)
Balance, end of year	1,826,404	656,324

6. Accounts receivable and other

	December 31 2020 $	December 31 2019 $
GST receivable	14,351	8,974
Prepaid expenses	44,115	6,494
	58,466	15,468

Prepaid expenses primarily include amounts in connection with investor relations conferences and marketing activities.

7. Intangible assets

Cost	Total $
Balance, December 31, 2018	371,777
Additions	7,037
Balance, December 31, 2019	378,814
Additions	46,588
Impairment	(100,220)
Balance, December 31, 2020	**325,182**

Accumulated amortization	Total $
Balance, December 31, 2018	86,916
Amortization	19,510
Balance, December 31, 2019	106,426
Amortization	20,098
Impairment	(35,658)
Balance, December 31, 2020	**90,866**

Carrying values	Total $
At December 31, 2019	272,388
At December 31, 2020	**234,316**

7. Intangible assets (continued)

The Company has licensed intellectual property from various third parties as described below:

a) The Company has licensed from a third party (the "Licensor"), under patent rights purchase agreement dated July 9, 2013 and amended April 15, 2014, certain patents relating to allopurinol for the treatment of hypertension. The Company paid a total of $42,460 (US$40,000) to the Licensor per the terms of the agreement.

The Company will also pay the Licensor royalties on the cumulative net revenues from the sale or sublicense of the product covered under the patent license until the later of (i) the expiration of the last patent right covering the product; and (ii) the expiration of ten years from the date of the first commercial sales of a product.

b) In December 2012, the Company entered into an agreement to license certain intellectual property relating to the use of all uric acid lowering agents to improve the treatment of metabolic syndrome. Under this patent rights purchase agreement, between the Company and Dr. Richard Johnson and Dr. Takahiko Nakagawa (the "Vendors"), the Company issued 143,100 common shares at $0.35 per common share for a total instalment price of $50,400. The Company also had the option to pay the Vendors an additional US$75,000 to purchase the patents which was set up as a provision in the year ended December 31, 2018. (Note 9)

During the year ended December 31, 2020, the Company determined that it was no longer feasible to complete the purchase and as such, indicators of impairment existed leading to a test of recoverable amount of the license, which resulted in an impairment loss of $64,562. As this valuation technique requires management's judgement and estimates of the recoverable amount, it is classified within level 3 of the fair value hierarchy.

The Company will pay the Vendors a royalty based on the cumulative net revenues from the sale or sublicense of the product covered under the licensed intellectual property until the later of (i) the expiration of the last patent right covering the product and (ii) the expiration of 10 years from the date of the first commercial sales of a product.

c) Pursuant to a license agreement dated October 9, 2012, as amended on June 23, 2014, between the Company and the University of Florida Research Foundation, Inc. ("UFRF"), the Company acquired the exclusive license to the certain intellectual property related to the use of all uric acid lowering agents to treat insulin resistance. The Company has paid or is obligated to pay UFRF the following consideration:

i) an annual license fee of US$1,000 (2020 fees– paid);
ii) reimburse UFRF for United States and/or foreign costs associated with the maintenance of the licensed patents;
iii) the issuance to UFRF of 180,397 shares of common stock of the Company (160,783 have been issued to UFRF as at December 31, 2020. Remaining shares to be issued are included in obligation to issue shares);
iv) milestone payments of US$500,000 upon receipt of FDA approval to market licensed product in the United States of America and US$100,000 upon receipt of regulatory approval to market each licensed product in each of other jurisdictions;
v) royalty payments of up to 1.5% of net sales of products covered by the license until the later of (i) the expiration of any patent claims or (ii) 10 years from the date of the first commercial sale of any covered product in each country. Following commencement of commercial sales, the Company will be subject to certain annual minimum royalty payments that will increase annually up to a maximum of US$100,000 per year; and
vi) UFRF is entitled to receive a royalty of 5% of amounts received from any sub-licensee that are not based directly on product sales, excluding payments received for research and development or purchases of the Company's securities at not less than fair market value.

UFRF may terminate the agreement if the Company fails to meet the above specified milestones.

(Expressed in Canadian Dollars)

8. Accounts payable and accrued liabilities

	December 31 2020	December 31 2019
	$	$
Trade payables	389,982	607,389
Accrued liabilities	644,231	544,086
Total	1,034,213	1,151,475

9. Provision for patent acquisition

The Company had the option to pay US$75,000 in respect of a patent rights purchase agreement dated December 5, 2012 (Note 7). During the year ended December 31, 2020, the Company determined that the purchase was no longer feasible; therefore, the provision was reversed.

	December 31 2020	December 31 2019
	$	$
Balance, beginning of year	97,410	102,315
Foreign exchange adjustment	(1,920)	(4,905)
Recovery of provision	(95,490)	—
Balance, end of year	—	97,410

10. Convertible loans

On July 20, 2017, the Company issued a convertible note in connection with a service agreement pursuant to which the holder agreed to perform research and development services on behalf of the Company. The convertible note had a face value of US$30,000, was unsecured, bore interest at 15% and matured on July 19, 2020.

The conversion of the convertible note provided that upon the occurrence of an equity financing of at least US$1,000,000, the outstanding principal amount of the note and accrued interest, could, at the option of the note holder, be either (i) exchanged into the same securities issued in the equity financing or (ii) the note holder had the right to call all or a portion of the outstanding principal amount of the note together with all accrued interest immediately due and payable.

The liability component of this convertible note was calculated, at the date of issuance, as the present value of the principal and interest, at a rate approximating the interest rate that would have been applicable to non-convertible debt at the date the note was issued. The liability component was recorded at amortized cost and was accreted to the principal amount over the term of the convertible note by charges to accretion expense using an effective interest rate of 20%. During the year ended December 31, 2020, the $54,780 in debt was forgiven. The carrying value of the liability component was $nil at December 31, 2020 (2019 - $50,813). The carrying value of the conversion option of $5,202 was recorded as a separate component in total equity, and transferred to deficit when the debt was forgiven.

11. Share capital and reserves

a) Authorized and issued

Unlimited Class A common shares without par value – 6,914,746 issued as at December 31, 2020 (2019 – 5,359,429)
Unlimited Class B common shares without par value (none issued)
Unlimited Class C common shares without par value (none issued)
Unlimited Class D common shares without par value (none issued)
Unlimited Class E preferred shares without par value (none issued)
Unlimited Class F preferred shares without par value (none issued)

(Expressed in Canadian Dollars)

11. Share capital and reserves (continued)

b) Issuances

Year ended December 31, 2020:

On February 28, 2020, the Company closed a private placement, through the issuance of 1,555,317 units for gross proceeds of $2,556,320, of which $900,000 was received in cash, $50,000 represented the conversion of certain outstanding payables into units and $1,606,320 (US$1,200,000 at the then current exchange ratio) was issued to Prevail Partners LLC, who have agreed to provide certain services to the Company in exchange for units (Note 5).

Each unit comprised one common share and one common share purchase warrant exercisable at $2.94 for a period of one year from the issuance of the units. However, if at any time following the expiry of the statutory four-month hold period, the closing price of the common shares on the Canadian Securities Exchange is greater than $4.11 for 10 or more consecutive trading days, the Company may notify the holder, by way of a news release, that the warrants will expire on the 20th business day following the date of such notice, unless exercised by the holder before such date. The warrants were assigned a value of $91,297 using the residual method.

The Company paid $59,434 in cash share issuance costs and issued 11,896 finders' warrant units valued at $11,066, with each finder's warrant unit being exercisable at $1.64 for a period of 12 months from the closing of the private placement. Each finders' warrant unit comprised one common share and one common share purchase warrant exercisable at $2.94 for a period of one year from the closing date of the private placement. The warrants are subject to the same acceleration provision as the warrants issued in the private placement.

As at December 31, 2019, $70,000 of the cash proceeds were received and held in trust by the Company's lawyer and recorded as share subscriptions received in advance. The amount was reclassified to share capital during the year ended December 31, 2020, upon closing of the private placement.

Year ended December 31, 2019:

During the year ended December 31, 2019, there were no shares issued.

c) Escrow Shares

Following the closing of the RTO, the Company had an aggregate of 441,946 common shares held in escrow pursuant to an escrow agreement dated January 9, 2018. The shares are subject to a 10% release on January 25, 2018, with the remaining escrowed securities being released in 15% tranches every 6 months thereafter. As at December 31, 2020, there were 66,292 shares (2019 – 198,876) remaining in escrow.

d) Share Consolidation

Subject to the approval of the CSE, and in order to qualify for a listing on Nasdaq, the Company will complete a forward stock consolidation of the common shares on a basis of 1 post-Consolidation common shares for 11.74 pre-consolidation common share (the "Consolidation"). As required by IAS 33, Earnings per Share, all information with respect to the number of common shares and issuance prices for time periods prior to the Consolidation have been restated to reflect the Consolidation.

e) Share Purchase Warrants

A summary of the changes in warrants for the years ended December 31, 2020 and 2019 is presented below:

	Number of Warrants		Exercise price
Balance, December 31, 2018 and 2019	341,119	$	9.39
Granted – February 28, 2020	1,555,317	$	2.94
Expired – January 10, 2020	(341,119)	$	9.39
Balance, December 31, 2020	**1,555,317**	**$**	**2.94**

The weighted average contractual remaining life of the unexercised warrants was 0.16 years (2019 - 0.02 years)

(Expressed in Canadian Dollars)

11. Share capital and reserves (continued)

e) Share Purchase Warrants (continued)

The following table summarizes information on warrants outstanding at December 31, 2020:

Exercise Price	Number Outstanding	Expiry date	Average Remaining Contractual Life
$2.94	1,555,317	February 28, 2021	0.16 years

Subsequent to the year ended December 31, 2020, 328,790 warrants were exercised for gross proceeds of $985,000, the remaining warrants expired unexercised.

f) Finders' Warrant Units

A summary of the changes in finders' warrant units for the years ended December 31, 2020 and 2019 is presented below:

	Number of Warrants	Exercise price
Balance, December 31, 2018 and 2019	—	—
Granted – February 28, 2020 – finders' warrants	11,896	$ 1.64
Balance, December 31, 2020	**11,896**	**$ 1.64**

The weighted average contractual remaining life of the unexercised finders' warrant units was 0.16 years (2019 – N/A)

The following table summarizes information on finders' warrant units outstanding at December 31, 2020:

Exercise Price	Number Outstanding	Expiry date	Average Remaining Contractual Life
$1.64	11,896	February 28, 2021	0.16 years

The fair value of finders' warrant units was estimated at $11,059 on the date of grant using a compound options pricing model with the following inputs on the date of issuance of the finders' warrants units; allocated share price of $0.001 for the share component of the unit; allocated price of $2.94 for the warrant component of the unit; exercise price of the unit of $1.64; expected life of 1.0 years for both the share component and warrant component of the unit; expected volatility of 99.76%; risk free rate of 1.37%; and expected dividend yield of 0%.

Subsequent to the year ended December 31, 2020, 10,703 finders' warrant units were exercised for gross proceeds of $17,592; the underlying warrants were then exercised for gross proceeds of $31,414. The remaining finders' warrant units expired unexercised.

g) Stock Options

The Company has an incentive Stock Option Plan (the "Plan") for directors, officers, employees and consultants, under which the Company may issue stock options to purchase common shares of the Company provided that the amount of incentive stock options which may be granted and outstanding under the Plan at any time shall not exceed 10% of the then issued and outstanding common shares of the Company and subject to the prior ratification by the CSE.

The fair value of stock options granted was estimated on the date of grant using the Black-Scholes model with the following data and assumptions. There were no options granted during the year ended December 31, 2019.

(Expressed in Canadian Dollars)

11. Share capital and reserves (continued)

g) Stock Options (continued)

	2020
Dividend yield	Nil
Annualized volatility	151.64% - 152.24%
Risk-free interest rate	0.33%
Expected life	5 years

The risk-free interest rate is the yield on zero-coupon Canadian Treasury Bill of a term consistent with the assumed option life. The expected life of the option is the average expected period to exercise. Volatility is based on available historical volatility of the Company's share price. The Company has not declared dividends in the past.

Of the 268,313 options granted June 23, 2020, 127,768 of the options vested immediately and 140,545 options vest in equal monthly installments over 36 months.

The 12,777 options granted August 25, 2020 vested immediately.

The share-based payment expense recognized was $293,443 during the year ended December 31, 2020 (2019 – $26,317).

A summary of the changes in stock options for the years ended December 31, 2020 and 2019 is presented below:

	Number of Options	Exercise price
Balance, December 31, 2018	206,474	$ 5.87
Forfeited	(23,339)	$ 5.87
Balance, December 31, 2019	183,135	$ 5.87
Granted – June 23, 2020	268,313	$ 1.64
Granted – August 25, 2020	12,777	$ 2.82
Balance, December 31, 2020	**464,225**	**$ 3.29**
Vested and exercisable, December 31, 2020	**342,372**	**$ 3.87**

The weighted average contractual remaining life of the unexercised options was 3.64 years (2019 – 3.33 years).

The following table summarizes information on stock options outstanding at December 31, 2020:

Exercise Price	Number Outstanding	Number Exercisable	Average Remaining Contractual Life
$5.87	149,063	149,063	2,21 years
$5.87	12,777	12,777	2.77 years
$5.87	21,295	16,563	2.85 years
$1.64	268,313	151,193	4.48 years
$2.82	12,777	12,777	4.66 years
	464,225	342,372	

12. Related party transactions

All related party transactions were measured at the amount of consideration established and agreed to by the related parties. All amounts due from/payable to related parties are unsecured, non-interest bearing and have no fixed terms of repayment.

(Expressed in Canadian Dollars)

12. Related party transactions (continued)

During the years ended December 31, 2020 and 2019, the Company incurred the following transactions with related parties:

a) Wages and benefits were accrued to an officer of the Company in the amount of $196,097 (2019 - $194,166).

b) Professional fees were accrued to an officer of the Company in the amount of $30,000 (2019 - $30,000).

c) Consulting fees were accrued to a director of the Company for directors' fees in the amount of $36,000 (2019 - $nil).

d) As at December 31, 2020, $52,450 (2019 - $39,550) was payable to the Chief Financial Officer ("CFO") of the Company for CFO services, and $20,340 (2019 - $nil) was payable to a director of the Company for directors' fees. The balance is unsecured, non-interest bearing, and has no fixed terms of repayment.

e) As at December 31, 2020, $518,084 (2019 - $502,110) was accrued to the Chief Executive Officer ("CEO") of the Company, for CEO services. The balance is unsecured, non-interest bearing and has no fixed terms of repayment. The balance owing was paid subsequent to year end.

f) Management compensation transactions for the years ended December 31, 2020 and 2019 are summarized as follows:

	Short-term employee benefits	Share-based payments	Total
	$	$	$
Year ended December 31, 2019			
Directors and officers	224,166	29,646	253,812
Year ended December 31, 2020			
Directors and officers	**262,097**	**217,816**	**479,913**

13. Income taxes

The income taxes shown in the consolidated statements of comprehensive loss differ from the amounts obtained by applying statutory rates to the loss before income taxes due to the following:

	2020	2019
	$	$
Net loss for the year	(1,285,000)	(630,000)
Statutory tax rate	27%	27%
Expected income tax recovery	(347,000)	(170,000)
Decrease to income tax recovery due to:		
Non-deductible permanent differences	79,000	16,000
Temporary differences	6,000	—
(Over) under provided in prior years	(278,000)	13,000
Change in tax assets not recognized	540,000	141,000
Income tax recovery	—	—

(Expressed in Canadian Dollars)

13. Income taxes (continued)

The significant components of the Company's deferred tax assets are as follows:

	December 31, 2020	December 31, 2019
	$	$
Share issuance costs	18,000	8,000
Cumulative eligible capital	100,000	31,000
Operating losses carried forward	1,341,000	880,000
Total deferred tax assets	1,459,000	919,000
Deferred tax assets not recognized	(1,459,000)	(919,000)
	—	—

The realization of income tax benefits related to these deferred potential tax deductions is not probable. Accordingly, no deferred income tax assets have been recognized for accounting purposes. The Company has Canadian non-capital losses carried forward of approximately $4,966,000 that may be available for tax purposes. The losses expire as follows:

Expiry date	$
2032	135,000
2033	748,000
2034	325,000
2035	287,000
2036	364,000
2037	618,000
2038	1,089,000
2039	553,000
2040	847,000
Total	4,966,000

14. Financial instruments and risk management

The Company's financial instruments consist of cash, funds held in trust, accounts payable and accrued liabilities, and the liability component on convertible loans. These financial instruments are classified as financial assets at FVTPL and financial liabilities at amortized cost. The fair values of these financial instruments approximate their carrying values at December 31, 2020, due to their short-term nature.

The following table presents the Company's financial instruments, measured at fair value on the consolidated statements of financial position as at December 31, 2020 and 2019 and categorized into levels of the fair value hierarchy:

		December 31, 2020		December 31, 2019	
	Level	Carrying Value	Estimated Fair Value *	Carrying Value	Estimated Fair Value *
		$	$	$	$
FVTPL					
Cash	1	171,271	171,271	58,614	58,614
Funds held in trust	1	—	—	70,000	70,000
Other financial liabilities					
Accounts payable and accrued liabilities	2	1,034,213	1,034,213	1,151,475	1,151,475
Liability component on convertible loans	2	—	—	50,813	50,813

* Fair value approximates the carrying amounts due to the short-term nature.

(Expressed in Canadian Dollars)

14. Financial instruments and risk management (continued)

There were no transfers for levels of change in the fair value measurements of financial instruments for the years ended December 31, 2020 and 2019.

Risk management is carried out by the Company's management team with guidance from the Board of Directors. The Company's risk exposures and their impact on the Company's financial instruments were as follows:

a) Credit risk

Credit risk is the risk of financial loss to the Company if a customer of counterparty to a financial instrument fails to meet its obligations. The Company's maximum exposure to credit risk at the financial position date under its financial instruments is summarized as follows:

	December 31, 2020	December 31, 2019
	$	$
Cash	171,271	58,614
Funds held in trust	—	70,000

All of the Company's cash is held with major financial institutions in Canada and management believes the exposure to credit risk with such institutions is minimal. The Company considers the risk of material loss to be significantly mitigated due to the financial strength of the major financial institutions where cash is held. Funds held in trust consisted of cash held in trust by the Company's lawyer, received by the Company during the year ended December 31, 2019 in connection with the private placement closed on February 28, 2020. The Company's maximum exposure to credit risk as at December 31, 2020 and 2019 is the carrying value of its financial assets.

b) Liquidity risk

Liquidity risk is the risk that the Company will not be able to meet its obligations associated with financial liabilities. The Company has a planning and budgeting process in place by which it anticipates and determines the funds required to support normal operation requirements as well as the growth and development of its intellectual property portfolio.

The Company's financial assets are comprised of its cash and funds held in trust, and the financial liabilities are comprised of its accounts payable and accrued liabilities and the liability component on convertible loans.

The contractual maturities of these financial liabilities as at December 31, 2020 and 2019 are summarized below:

	Payments due by period as of December 31, 2020			
	Total	Less than 3 months	Between 3 months and 1 year	1-3 years
	$	$	$	$
Accounts payable and accrued liabilities	1,034,213	1,034,213	—	—
	1,034,213	1,034,213	—	—

(Expressed in Canadian Dollars)

14. Financial instruments and risk management (continued)

b) Liquidity risk (continued)

	Payments due by period as of December 31, 2019			
	Total	Less than 3 months	Between 3 months and 1 year	1-3 years
	$	$	$	$
Accounts payable and accrued liabilities	1,151,475	1,151,475	—	—
Liability component on convertible loans	50,813	50,813	—	—
	1,202,288	1,202,288	—	—

c) Market risk

i) Interest Rate Risk

Interest rate risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate due to changes in market interest rates. The Company's bank accounts bear interest. Management believes that the credit risk concentration with respect to financial instruments included in cash is minimal.

ii) Foreign Currency Risk

The Company is exposed to foreign exchange risk on its US$70,917 accounts payable and accrued liabilities balances, and US$404 cash account. Based on the foreign exchange exposure arising from the above, varying the foreign exchange rate to reflect a 10% appreciation or depreciation of the Canadian dollar against the U.S. dollar would result in an increase/decrease of approximately $7,000 (2019 - $61,000) in the Company's loss from operations.

15. Capital management

The Company defines capital that it manages as shareholders' equity (deficiency). The Company manages its capital structure in order to have funds available to support its research and development and sustain the future development of the business. When managing capital, the Company's objective is to ensure the entity continues as a going concern as well as to maintain optimal returns to shareholders and benefits for other stakeholders. Management adjusts the capital structure as necessary in order to support its activities.

Since inception, the Company's objective in managing capital is to ensure sufficient liquidity to finance its research and development activities, general and administrative expenses, expenses associated with intellectual property protection and its overall capital expenditures. There were no changes during the year ended December 31, 2020. The Company is not exposed to external requirements by regulatory agencies regarding its capital.

16. Commitments

The Company has long-term arrangements with commitments as at December 31, 2020 and 2019 as follows:

	December 31 2020	December 31 2019
	$	$
Management services – officers	192,000	192,000

The President, CEO and a director of the Company has a long-term employment agreement with the Company. The agreement has a termination clause whereby he is entitled to the equivalent of 12 times his then current monthly salary which, as of December 31, 2020 equated to $192,000.

17. Subsequent events

Subsequent to the year ended December 31, 2020, the Company:

a) Closed a private placement with the issuance of 2,085,714 units at a subscription price of $2.935 per unit for gross proceeds of $6,121,572. Each unit comprised one common share and one common share purchase warrant. Each warrant entitles the holder, on exercise, to purchase one additional common share in the capital of the Company, at a price of $4.70 for a period of 5 years from the issuance of the units; provided, however, that, if, at any time following the expiry of the statutory four month hold period, the closing price of the common shares on the CSE is greater than $14.09 for 10 or more consecutive trading days, the warrants will be accelerated upon notice and the warrants will expire on the 30th calendar day following the date of such notice. In addition, the Warrants will also be subject to typical anti-dilution provisions and a ratchet provision that provides for an adjustment in the exercise price should the Company issue or sell common shares or securities convertible into common shares at a price (or conversion price, as applicable) less than the exercise price such that the exercise price shall be amended to match such lower price.

   In connection with the private placement, the Company paid $171,085 in cash commissions and issued 58,291 finders' warrants. Each finders' warrant is exercisable into one common share at a price of $4.70 and having the same expiry, acceleration and anti-dilution provisions as the warrants included in the private placement. The common shares and warrants comprising the units issued pursuant to the private placement, and any common shares issued upon the exercise of the warrants or the finder's warrants, are subject to a four month hold period pursuant to applicable securities laws.

b) Issued 25,554 common shares pursuant to the terms of an investor relations services agreement.

CONDENSED INTERIM CONSOLIDATED FINANCIAL STATEMENTS

For the three and six months ended June 30, 2021 and 2020
(Unaudited - expressed in Canadian Dollars)

XORTX THERAPEUTICS INC.
Condensed Interim Consolidated Statements of Financial Position
(Unaudited - expressed in Canadian Dollars)

	Note	June 30, 2021	December 31, 2020
		$	$
Assets			
Current			
Cash		5,148,514	171,271
Contract payments	**5**	1,826,404	1,826,404
Prepaid expenses and other	**6**	122,257	58,466
		7,097,175	2,056,141
Non-current			
Intangible assets	**7**	236,160	234,316
Total Assets		**7,333,335**	**2,290,457**
Liabilities			
Current			
Accounts payable and accrued liabilities	**8**	421,188	1,034,213
Derivative warrant liability	**9(g)**	3,592,000	-
Total Liabilities		4,013,188	1,034,213
Shareholders' Equity			
Share capital	**9**	12,255,345	8,258,395
Share-based payments, warrant reserve and other	**9**	1,462,462	1,003,609
Obligation to issue shares	**7(c)**	32,238	32,238
Deficit		(10,429,898)	(8,037,998)
Total Shareholders' Equity		3,320,147	1,256,244
Total Liabilities and Shareholders' Equity		**7,333,335**	**2,290,457**

Nature of Operations (Note 1)
Commitments (Note 13)

/s/ "Allen Davidoff"
Director

/s/ "Paul Van Damme"
Director

The accompanying notes are an integral part of these condensed interim consolidated financial statements.

XORTX THERAPEUTICS INC.
Condensed Interim Consolidated Statements of Comprehensive Loss
For the three and six months ended June 30, 2021 and 2020
(Unaudited - expressed in Canadian Dollars)

	Note	Three months ended June 30		Six months ended June 30	
		2021	2020	2021	2020
				$	$
Expenses					
Amortization	**7**	4,373	5,095	8,617	10,145
Consulting	**10**	94,480	33,708	246,341	48,708
General and administrative		13,012	3,445	23,824	5,841
Investor relations		60,251	40,081	265,125	78,356
Listing fees		36,903	14,063	51,456	25,826
Professional fees	**10**	491,552	22,785	604,373	49,761
Research and development		26,423	12,452	40,209	14,874
Share-based payments	**9(f),10**	90,451	189,524	293,441	196,252
Travel		-	-	2,100	8,460
Wages and benefits	**10**	48,000	49,740	100,412	100,097
Loss before other items		(865,445)	(370,893)	(1,635,898)	(538,320)
Accretion		-	(425)	-	(846)
Transaction costs on derivative warrant liability		-	-	(85,732)	-
Gain (loss) on derivative warrant liability	**9(g)**	655,000	-	(660,000)	-
Foreign exchange (loss) gain		(7,336)	(90,907)	(7,723)	52,197
Interest and other expenses		(665)	(2,525)	(2,547)	(11,012)
Forgiveness of debt		-	91,014	-	91,014
Net loss and comprehensive loss for the period		(218,446)	(373,736)	(2,391,900)	(406,967)
Basic and diluted loss per common share		(0.02)	(0.05)	(0.27)	(0.06)
Weighted average number of common shares outstanding					
Basic and diluted		9,376,211	6,914,746	8,808,115	6,410,550

The accompanying notes are an integral part of these condensed interim consolidated financial statements.

XORTX THERAPEUTICS INC.
Condensed Interim Consolidated Statements of Changes in Shareholders' Equity
(Unaudited - expressed in Canadian Dollars)

	Note	Number of common shares	Share capital	Reserves	Obligation to issue shares	Share subscriptions received in advance	Equity component on convertible loans	Deficit	Total
		$	$	$			$	$	$
Balance, December 31, 2019		5,359,429	5,863,872	607,803	-	70,000	5,202	(6,758,598)	(211,721)
Shares issued pursuant to private placement	**9(b)**	1,555,317	2,556,320	-	-	(70,000)	-	-	2,486,320
Share issuance costs		-	(70,500)	11,066	-	-	-	-	(59,434)
Convertible loan debt forgiveness		-		5,202			(5,202)	-	-
Share-based payments	**9(e)**	-	-	196,252	-	-	-	-	196,252
Net loss for the period		-	-	-	-	-	-	(406,967)	(406,967)
Balance, June 30, 2020		**6,914,746**	**8,349,692**	**820,323**	**-**	**-**	**-**	**(7,165,565)**	**2,004,450**
		-							
Warrants pursuant to private placement	**9(b)**	-	(91,297)	91,297	-	-	-	-	-
Convertible loan debt forgiveness		-	-	(5,202)	-	-	-	5,202	-
Obligation to issue shares	**7(c)**	-	-	-	32,238	-	-	-	32,238
Share-based payments	**9(f)**	-	-	97,191	-	-	-	-	97,191
Net loss for the period		-	-	-	-	-	-	(877,635)	(877,635)
Balance, December 31, 2020		**6,914,746**	**8,258,395**	**1,003,609**	**32,238**	**-**	**-**	**(8,037,998)**	**1,256,244**
Shares issued pursuant to private placement	**9(b)**	2,085,714	6,121,572	-	-	-	-	-	6,121,572
Warrants issued	**9**	-	(2,932,000)	-	-	-	-		(2,932,000)
Share issuance costs	**9(b)**	-	(311,216)	195,000	-	-	-	-	(116,216)
Warrants exercised		350,197	1,043,594	(29,588)	-	-	-		1,014,006
Shares issued for services		25,554	75,000	-	-	-	-		75,000
Share-based payments	**9(e)**	-	-	293,441	-	-	-	-	293,441
Net loss for the period		-	-	-	-	-	-	(2,391,900)	(2,391,900)
Balance, June 30, 2021		**9,376,211**	**12,255,345**	**1,462,462**	**32,238**	**-**	**-**	**(10,429,898)**	**3,320,147**

The accompanying notes are an integral part of these condensed interim consolidated financial statements.

XORTX THERAPEUTICS INC.
Condensed Interim Consolidated Statements of Cash Flows
For the six months ended June 30, 2021 and 2020
(Unaudited - expressed in Canadian Dollars)

	Six months ended June 30	
	2021	**2020**
	$	**$**
Cash provided by (used in):		
Operating activities		
Net loss for the period	(2,391,900)	(406,967)
Items not affecting cash:		
Accretion expense	-	846
Loss on derivative warrant liability	660,000	-
Amortization	8,617	10,145
Forgiveness of debt	-	(91,014)
Share-based payments	293,441	196,252
Shares issued for services	75,000	-
Unrealized foreign exchange loss	(8,234)	(13,971)
Changes in non-cash operating assets and liabilities:		
Funds held in trust	-	70,000
Deposits	-	(1,606,320)
Prepaid expenses and other	(63,988)	(212,624)
Accounts payable and accrued liabilities	(604,594)	(126,446)
	(2,031,658)	(2,180,099)
Investing activities		
Acquisition of intangible assets	(10,461)	(6,856)
	(10,461)	(6,856)
Financing activities		
Proceeds from issuance of shares	6,121,572	2,486,320
Cash share issuance costs	(116,216)	(59,434)
Warrants exercised	1,014,006	-
Deferred share issuance costs	-	14,842
	7,019,362	2,441,728
Increase in cash	4,977,243	254,773
Cash, beginning of period	171,271	58,614
Cash, end of period	5,148,514	313,387
Supplemental Cash Flow and Non-Cash Investing and Financing Activities Disclosure		
Cash paid for interest	-	-
Cash paid for income taxes	-	-
Application of CATO deposit against accounts payable	-	172,784

The accompanying notes are an integral part of these condensed interim consolidated financial statements.

1. Nature of operations

XORTX Therapeutics Inc. (the "Company" or "XORTX") was incorporated under the laws of Alberta, Canada on August 24, 2012 under the name ReVasCor Inc. and was continued under the Canada Business Corporations Act on February 27, 2013 under the name of XORTX Pharma Corp. Upon completion of the reverse take-over ("RTO") transaction on January 10, 2018 with APAC Resources Inc. ("APAC"), a company incorporated under the laws of British Columbia, the Company changed its name to "XORTX Therapeutics Inc." and XORTX Pharma Corp. became a wholly-owned subsidiary.

XORTX is a public company listed on the Canadian Securities Exchange (the "CSE") under the symbol "XRX", and the OTCQB Venture Market under the symbol "XRTXF". The Company's operations and mailing address is Suite 4000, 421 - 7th Avenue SW, Calgary, Alberta, T2P 4K9 and its head and registered address is located at Suite 2400, 745 Thurlow Street, Vancouver, British Columbia, V6E 0C5.

XORTX is a bio-pharmaceutical company, dedicated to the development and commercialization of therapies to treat progressive kidney disease modulated by aberrant purine and uric acid metabolism in orphan disease indications such as autosomal dominant polycystic kidney disease, larger market type 2 diabetic nephropathy, and fatty liver disease. The Company's current focus is on developing products to slow and/or reverse the progression of kidney disease in patients at risk of end stage kidney failure.

Although there is no certainty, management is of the opinion that additional funding for future projects and operations can be raised as needed. The Company is subject to a number of risks associated with the successful development of new products and their marketing and the conduct of its clinical studies and their results. The Company will have to finance its research and development activities and its clinical studies. To achieve the objectives in its business plan, the Company plans to raise the necessary capital and to generate revenues. The products developed by the Company will require approval from the U.S. Food and Drug Administration and equivalent organizations in other countries before their sale can be authorized. If the Company is unsuccessful in obtaining adequate financing in the future, research activities will be postponed until market conditions improve.

In March 2020, the World Health Organization declared coronavirus COVID-19 a global pandemic. This contagious disease outbreak, which has continued to spread, and any related adverse public health developments, have adversely affected workforces, economies, and financial markets globally, potentially leading to an economic downturn. It is not possible for the Company to predict the duration or magnitude of the adverse results of the outbreak and its effects on the Company's business or results of operations at this time but may impact the Company's ability to obtain additional financing to support future research projects.

2. Basis of preparation

Statement of Compliance

These condensed interim consolidated financial statements have been prepared in accordance with International Standard 34, *Interim Financial Reporting* as issued by the International Accounting Standards Board ("IASB") and interpretations of the IFRS Interpretations Committee ("IFRIC"). Accordingly, certain disclosures included in the annual financial statements prepared in accordance with International Financial Reporting Standards ("IFRS") have been condensed or omitted. These unaudited condensed interim consolidated financial statements should be read in conjunction with the Company's audited consolidated financial statements for the year ended December 31, 2020.

Basis of Measurement and Presentation

These condensed interim consolidated financial statements have been prepared using the historical cost convention using the accrual basis of accounting except for financial instruments which have been measured at fair value. In the opinion of management, all adjustments (including normal recurring accruals), considered necessary for a fair presentation have been included. The accounting policies have been applied consistently to all periods presented in these consolidated financial statements.

2. Basis of preparation (continued)

These condensed interim consolidated financial statements incorporate the financial statements of the Company and its 100% owned subsidiaries. The accounts of the Company's subsidiary are prepared for the same reporting period as the parent company, using consistent accounting policies, and all intercompany transactions and balances are eliminated on consolidation.

These condensed interim consolidated financial statements were approved for issue by the Board of Directors on August 26, 2021.

3. Accounting policies

These condensed interim consolidated financial statements have been prepared on a basis consistent with the significant accounting policies disclosed in the annual financial statements for the year ended December 31, 2020. Accordingly, they should be read in conjunction with the annual consolidated financial statements for the year ended December 31, 2020, other than as noted below:

Derivative warrant liabilities

During the six-month period ended June 30, 2021 the Company issued common share units with warrants for the Company's common shares. The warrants are classified as a derivative financial liability as they contain a ratchet provision that provides for an adjustment in the exercise price if shares or securities convertible to shares are sold at a price lower than the exercise price. Therefore since the warrants, (not including compensation warrants), may be settled other than by the exchange of a fixed amount of cash they meet the definition of a derivative financial liability. The warrants are initially recognized at fair value and subsequently measured at fair value with changes recognized through profit or loss.

The Company uses the Black-Scholes pricing model to estimate fair value at each exercise and period end date. The key assumptions used in the model are described in Note 9(g).

4. Critical accounting judgments and estimates

The preparation of consolidated financial statements requires management to make judgments and estimates that affect the amounts reported in the consolidated financial statements and notes. By their nature, these judgments and estimates are subject to change and the effect on the consolidated financial statements of changes in such judgments and estimates in future periods could be material. These judgments and estimates are based on historical experience, current and future economic conditions, and other factors, including expectations of future events that are believed to be reasonable under the circumstances. Actual results could differ from these judgments and estimates.

Revisions to accounting estimates are recognized in the period in which the estimate is revised and may affect both the period of revision and future periods. Information about critical accounting judgments in applying accounting policies that have the most significant risk of causing material adjustment to the carrying amounts of assets and liabilities recognized in the consolidated financial statements within the next financial year are discussed below:

Share-based payment transactions and warrant liabilities
The Company measures the cost of equity-settled transactions with employees by reference to the fair value of the equity instruments at the date at which they are granted. Estimating fair value for share-based payment transactions requires determining the most appropriate valuation model, which is dependent on the terms and conditions of the grant. This estimate also requires determining the most appropriate inputs to the valuation model including the expected life of the share option, volatility and dividend yield and making assumptions about them. Warrant liabilities are accounted for as derivative liabilities as exercise is not fixed. The assumptions and models used for estimating fair value for share-based payment transactions and warrant liabilities are disclosed in Note 9.

(Unaudited - expressed in Canadian Dollars)

4. Critical accounting judgments and estimates (continued)

Impairment of intangible assets
Patents (obtained and pending) and licenses are reviewed for impairment at each financial reporting date. If, in the judgment of management, future economic benefits will not flow to the Company, then the Company will assess the recoverable value of the asset. If the carrying value is greater than the recoverable value, the asset will be impaired to the recoverable value.

Going concern assumption
The preparation of these condensed interim consolidated financial statements requires management to make judgments regarding the ability of the Company to continue as a going concern as discussed in Note 1.

5. Contract payments

During 2018, the Company entered into an agreement with Cato Research Canada Inc. ("Cato") to manage a planned clinical study. As part of this agreement, the Company made a payment of USD $505,331 and has committed to utilize Cato for this clinical study, subject to certain conditions. During the year ended December 31, 2020, Cato agreed to apply $436,240 of the payments against the accounts payable balance owing to Cato and forgive interest on these balances of $36,234.

During the year ended December 31, 2020, the Company entered into an agreement with Prevail InfoWorks Inc. As part of the agreement, the Company paid $1,606,320 through the issuance of units in the private placement (USD $1,200,000 at the exchange rate on the date of the transaction) to be applied to future regulatory and clinical trial programs. The 977,318 units issued were measured by reference to their fair value on the issuance date, which is equal to the $1.64 per unit in the concurrent private placement.

The change in the deposits for the six months ended June 30, 2021 and year ended December 31, 2020 are shown below:

	June 30 2021	December 31 2020
	$	$
Balance, beginning of period	1,826,404	656,324
Additions	-	1,606,320
Application of deposit against accounts payable	-	(436,240)
Balance, end of period	1,826,404	1,826,404

6. Prepaid expenses and other

	June 30 2021	December 31 2020
	$	$
GST receivable	22,835	14,351
Prepaid expenses	99,422	44,115
	122,257	58,466

Prepaid expenses primarily include amounts in connection with investor relations conferences and investor relations.

(Unaudited - expressed in Canadian Dollars)

7. Intangible assets

Cost	**Total**
	$
Balance, December 31, 2019	378,814
Additions	46,588
Impairment	(100,220)
Balance, December 31, 2020	325,182
Additions	10,461
Balance, June 30, 2021	**335,643**

Accumulated amortization	**Total**
	$
Balance, December 31, 2019	106,426
Amortization	20,098
Impairment	(35,658)
Balance, December 31, 2020	90,866
Amortization	8,617
Balance, June 30, 2021	**99,483**

Carrying values	**Total**
	$
At December 31, 2020	234,316
At June 30, 2021	**236,160**

The Company has licensed intellectual property from various third parties. The intangible assets relate solely to licensed intellectual property and there are no other classes of intangible assets. The intangible assets are as described below:

a) The Company has licensed from a third party (the "Licensor"), under patent rights purchase agreement dated July 9, 2013 and amended April 15, 2014, certain patents relating to allopurinol for the treatment of hypertension. The Company paid a total of $42,460 (US$40,000) to the Licensor per the terms of the agreement.

The Company will also pay the Licensor royalties on the cumulative net revenues from the sale or sublicense of the product covered under the patent license until the later of (i) the expiration of the last patent right covering the product; and (ii) the expiration of ten years from the date of the first commercial sales of a product.

b) In December 2012, the Company entered into an agreement to license certain intellectual property relating to the use of all uric acid lowering agents to improve the treatment of metabolic syndrome. Under this patent rights purchase agreement, between the Company and Dr. Richard Johnson and Dr. Takahiko Nakagawa (the "Vendors"), the Company issued 143,100 common shares at $0.35 per common share for a total instalment price of $50,400. The Company also had the option to pay the Vendors an additional US$75,000 to purchase the patents which was set up as a provision in the year ended December 31, 2018.

During the year ended December 31, 2020, the Company determined that it was no longer feasible to complete the purchase and as such, indicators of impairment existed leading to a test of recoverable amount of the license, which resulted in an impairment loss of $64,562. As this valuation technique requires management's judgement and estimates of the recoverable amount, it is classified within level 3 of the fair value hierarchy.

The Company will pay the Vendors a royalty based on the cumulative net revenues from the sale or sublicense of the product covered under the licensed intellectual property until the later of (i) the expiration of the last patent right covering the product and (ii) the expiration of 10 years from the date of the first commercial sales of a product.

(Unaudited - expressed in Canadian Dollars)

7. Intangible assets (continued)

c) Pursuant to a license agreement dated October 9, 2012, as amended on June 23, 2014, between the Company and the University of Florida Research Foundation, Inc. ("UFRF"), the Company acquired the exclusive license to certain intellectual property related to the use of all uric acid lowering agents to treat insulin resistance. The Company has paid or is obligated to pay UFRF the following consideration:

i) an annual license fee of US$1,000 (2020 fees– paid);
ii) reimburse UFRF for United States and/or foreign costs associated with the maintenance of the licensed patents;
iii) the issuance to UFRF of 180,397 shares of common stock of the Company (160,783 have been issued to UFRF as at June 30, 2021. Remaining shares to be issued are included in obligation to issue shares);
iv) milestone payments of US$500,000 upon receipt of FDA approval to market licensed product in the United States of America and US$100,000 upon receipt of regulatory approval to market each licensed product in each of other jurisdictions;
v) royalty payments of up to 1.5% of net sales of products covered by the license until the later of (i) the expiration of any patent claims or (ii) 10 years from the date of the first commercial sale of any covered product in each country. Following commencement of commercial sales, the Company will be subject to certain annual minimum royalty payments that will increase annually to a maximum of US$100,000 per year; and
vi) UFRF is entitled to receive a royalty of 5% of amounts received from any sub-licensee that are not based directly on product sales, excluding payments received for research and development or purchases of the Company's securities at not less than fair market value.

UFRF may terminate the agreement if the Company fails to meet the above specified milestones.

8. Accounts payable and accrued liabilities

	June 30 2021	December 31 2020
	$	$
Trade payables	359,099	389,982
Accrued liabilities	62,089	644,231
Total	421,188	1,034,213

9. Share capital and reserves

a) Authorized and issued

Unlimited common shares – 9,376,211 issued at June 30, 2021 (December 31, 2020 – 6,914,746)

b) Issuances

Six months ended June 30, 2021:

On February 9, 2021, the Company closed a private placement with the issuance of 2,085,714 units at a subscription price of $2.935 per unit for gross proceeds of $6,121,572. Each unit comprised one common share and one common share purchase warrant. Each warrant entitles the holder, on exercise, to purchase one additional common share in the capital of the Company, at a price of $4.70 for a period of 5 years from the issuance of the

9. Share capital and reserves (continued)

units; provided, however, that, if, at any time following the expiry of the statutory four month hold period, the closing price of the common shares on the CSE is greater than $14.09 for 10 or more consecutive trading days, the warrants will be accelerated upon notice and the warrants will expire on the 30th calendar day following the date of such notice. In addition, the Warrants will also be subject to typical anti-dilution provisions and a ratchet provision that provides for an adjustment in the exercise price should the Company issue or sell common shares or securities convertible into common shares at a price (or conversion price, as applicable) less than the exercise price such that the exercise price shall be amended to match such lower price.

In connection with the private placement, the Company paid $116,216 in cash commissions and issued 58,291 finders' warrants. Each finders' warrant is exercisable into one common share at a price of $4.70 and having the same expiry, acceleration and anti-dilution provisions as the warrants included in the private placement.

The company issued 350,197 common shares for the exercise of warrants in the amount of $1,014,006. A value of $29,588 was transferred from the share-based payments to share capital as a result.

Pursuant to the terms of a consulting agreement the Company issued 25,554 common shares with a fair value of $75,000 in exchange for services.

Year ended December 31, 2020:

On February 28, 2020, the Company closed a private placement, through the issuance of 1,555,317 units for gross proceeds of $2,556,320, of which $900,000 was received in cash, $50,000 represented the conversion of certain outstanding payables into units and $1,606,320 (US$1,200,000 at the then current exchange ratio) was issued to Prevail Partners LLC, who have agreed to provide certain services to the Company in exchange for units. The 977,318 units issued to Prevail Partners LLC were measured by reference to their fair value on the issuance date, which is equal to the $1.64 per unit in the concurrent private placement.

Each unit comprised one common share and one common share purchase warrant exercisable at $2.94 for a period of one year from the issuance of the units. However, if at any time following the expiry of the statutory four-month hold period, the closing price of the common shares on the Canadian Securities Exchange is greater than $4.11 for 10 or more consecutive trading days, the Company may notify the holder, by way of a news release, that the warrants will expire on the 20th business day following the date of such notice, unless exercised by the holder before such date. The warrants were assigned a value of $91,297 using the residual method.

The Company paid $59,434 in cash share issuance costs and issued 11,896 finders' warrant units valued at $11,066, with each finder's warrant unit being exercisable at $1.64 for a period of 12 months from the closing of the private placement. Each finders' warrant unit comprised one common share and one common share purchase warrant exercisable at $2.94 for a period of one year from the closing date of the private placement. The warrants are subject to the same acceleration provision as the warrants issued in the private placement.

As at December 31, 2019, $70,000 of the cash proceeds were received and held in trust by the Company's lawyer and recorded as share subscriptions received in advance. The amount was reclassified to share capital during the year ended December 31, 2020, upon closing of the private placement.

c) Escrow Shares

Following the closing of the RTO, the Company had an aggregate of 441,946 common shares held in escrow pursuant to an escrow agreement dated January 9, 2018. The shares are subject to a 10% release on January 25, 2018, with the remaining escrowed securities being released in 15% tranches every 6 months thereafter. As at June 30, 2021, there were nil shares (December 31, 2020 – 66,292) remaining in escrow.

(Unaudited - expressed in Canadian Dollars)

9. Share capital and reserves (continued)

d) Common Share Purchase Warrants

A summary of the changes in warrants for the period ended June 30, 2021 and year ended December 31, 2020 is presented below:

	Number of Warrants	Exercise price
Balance, December 31, 2019	341,119	$ 9.39
Granted – February 28, 2020	1,555,317	$ 2.94
Expired – January 10, 2020	(341,119)	$ 9.39
Balance, December 31, 2020	1,555,317	$ 2.94
Granted – February 9, 2021	2,085,716	$ 4.70
Exercised	(339,494)	$ 2.94
Expired	(1,215,824)	$ 2.94
Balance, June 30, 2021	**2,085,715**	**$ 4.70**

The weighted average contractual remaining life of the unexercised warrants was 4.62 years (2020 – 0.16 years)

The following table summarizes information on warrants outstanding at June 30, 2021:

Exercise Price	Number Outstanding	Expiry date	Average Remaining Contractual Life
$4.70	2,085,715	February 9, 2026	4.62 years

e) Finders' Warrants

A summary of the changes in finders' warrants for the period ended June 30, 2021 and year ended December 31, 2020 is presented below:

	Number of Warrants	Exercise price
Balance, December 31, 2019	-	-
Granted – February 28, 2020 – finders' warrants	11,896	$ 1.64
Balance, December 31, 2020	11,896	$ 1.64
Granted – February 9, 2021 – finders' warrants	58,291	$ 4.70
Exercised	(10,703)	$ 1.64
Expired	(1,193)	$ 1.64
Balance, June 30, 2021	**58,291**	**$ 4.70**

The weighted average contractual remaining life of the unexercised finders' warrant was 4.62 years (2020 – 0.16 years)

The following table summarizes information on finders' warrants outstanding at June 30, 2021:

Exercise Price	Number Outstanding	Expiry date	Average Remaining Contractual Life
$4.70	58,291	February 9, 2026	4.62 years

The fair value of finders' warrant was estimated at $195,000 on the date of grant using Black-Scholes. The exercise price of the unit of $4.70; expected life of 5.0 years; expected volatility of 160%; risk free rate of 0.58%; and expected dividend yield of 0%.

(Unaudited - expressed in Canadian Dollars)

9. Share capital and reserves (continued)

f) Stock Options

The Company has an incentive Stock Option Plan (the "Plan") for directors, officers, employees and consultants, under which the Company may issue stock options to purchase common shares of the Company provided that the amount of incentive stock options which may be granted and outstanding under the Plan at any time shall not exceed 10% of the then issued and outstanding common shares of the Company and subject to the prior ratification by the CSE.

The fair value of stock options granted was estimated on the date of grant using the Black-Scholes model with the following data and assumptions.

	2021	2020
Dividend yield	Nil	Nil
Annualized volatility	145.73%-149.46%	151.64% - 152.24%
Risk-free interest rate	0.36%-0.46%	0.33%
Expected life	5 years	5 years

The risk-free interest rate is the yield on zero-coupon Canadian Treasury Bill of a term consistent with the assumed option life. The expected life of the option is the average expected period to exercise. Volatility is based on available historical volatility of the Company's share price. The Company has not declared dividends in the past.

The 59,625 options granted January 11, 2021 vested immediately.

Of the 268,313 options granted June 23, 2020, 127,768 of the options vested immediately and 140,545 options vest in equal monthly installments over 36 months.

The 12,777 options granted August 25, 2020 vested immediately.

42,589 options were granted May 12, 2021. 21,295 of these options vested immediately, and 21,294 options vest in equal monthly installments over 36 months.

The 21,295 options granted June 16, 2021 vested immediately.

The share-based payment expense recognized was $90,451 and $293,441 during the three and six months ended June 30, 2021 (2020 - $189,524 and $196,252).

A summary of the changes in stock options for the six months ended June 30, 2021 and year ended December 31, 2020 is presented below:

	Number of Options		Exercise price
Balance, December 31, 2019	183,135	$	5.87
Granted – June 23, 2020	268,313	$	1.64
Granted – August 25, 2020	12,777	$	2.82
Balance, December 31, 2020	**464,225**	**$**	**3.29**
Granted – January 11, 2021	59,625	$	3.29
Granted – May 12, 2021	42,589	$	1.88
Granted – June 16, 2021	21,295	$	1.76
Expired	—	$	3.40
Balance, June 30, 2021	**506,814**	$	3.17
Vested and exercisable, June 30, 2021	**405,547**	**$**	**3.52**

(Unaudited - expressed in Canadian Dollars)

9. Share capital and reserves (continued)

The weighted average contractual remaining life of the unexercised options was 3.53 years (December 31, 2020 – 3.64 years).

The following table summarizes information on stock options outstanding at June 30, 2021:

Exercise Price	Number Outstanding	Number Exercisable	Average Remaining Contractual Life
$5.87	127,768	127,768	1.72 years
$5.87	21,295	18,929	2.35 years
$1.64	221,465	142,675	3.98 years
$2.82	12,777	12,777	4.16 years
$3.29	59,625	59,625	4.54 years
$1.88	42,589	22,478	4.87 years
$1.76	21,295	21,295	4.96 years
	506,814	405,547	

g) Derivative warrant liability

Private Placement Warrants:
During the three-month period ended June 30, 2021, the Company issued warrants for the Company's common shares pursuant to a financing in February, 2021 as described above.

The warrants issued as part of the unit contain a ratchet provision that provides for an adjustment in the exercise price if shares or securities convertible to shares are sold at a price lower than the exercise price. Therefore since the warrants, (not including compensation warrants), may be settled other than by the exchange of a fixed amount of cash they meet the definition of a derivative financial liability.

The fair value of warrant was estimated at $2,932,000 on the date of grant using the Black-Scholes model with the following assumptions: exercise price of the warrant of $4.70; expected life of 5.0 years; expected volatility of 160%; risk free rate of 0.58%; and expected dividend yield of 0%.

No warrants were exercised during the period.

The balance of the derivative warrant liabilities (level 3) is as follows:

	June 30 2021
Balance at January 1, 2021	**$ -**
Warrants issued February 9, 2021	2,932,000
Fair value adjustment	660,000
Balance at June 30, 2021	**$ 3,592,000**

Significant assumptions used in determining the fair value of the derivative warrant liabilities at June 30, 2021 are as follows:

(Unaudited - expressed in Canadian Dollars)

9. Share capital and reserves (continued)

	June 30, 2021
Share price	**$ 2.00**
Risk-free interest rate	**0.88%**
Dividend yield	**0%**
Expected volatility	**156%**
Remaining term (in years)	**4.6**

The fair value is classified as level 3 as expected volatility is determined using historical volatility, and is therefore not an observable input.

h) Share Consolidation

Subject to the approval of the CSE, and in order to qualify for a listing on Nasdaq, the Company will complete a forward stock consolidation of the common shares on a basis of 1 post-Consolidation common shares for 11.74 pre-consolidation common share (the "Consolidation"). As required by IAS 33, *Earnings per Share*, all information with respect to the number of common shares and issuance prices for time periods prior to the Consolidation have been restated to reflect the Consolidation.

10. Related party transactions

All related party transactions were measured at the amount of consideration established and agreed to by the related parties. All amounts due from/payable to related parties are unsecured, non-interest bearing and have no fixed terms of repayment.

During the three and six months ended June 30, 2021, the Company incurred the following transactions with related parties:

a) Wages and benefits were accrued to an officer of the Company in the amount of $48,000 and $100,412 (2020 - $49,740 and $100,097).

b) Professional fees were accrued to an officer of the Company in the amount of $27,000 and $34,500 (2020 - $7,500 and $15,000).

c) Consulting fees were accrued to directors of the Company in the amount of $29,000 and $38,000 (2020 - $9,000 and $18,000).

d) As at June 30, 2021, $9,040 (December 31, 2020 - $52,450) was payable to the Chief Financial Officer ("CFO") of the Company for CFO services, and $3,390 (December 31, 2020 - $20,340) was payable to a director of the Company and $nil (December 31, 2020 - $518,084) was accrued to the Chief Executive Officer ("CEO") of the Company, for CEO services. The balances are unsecured, non-interest bearing, and have no fixed terms of repayment.

e) Management compensation transactions for the three and six months ended June 30, 2021 and 2020 are summarized as follows:

(Unaudited - expressed in Canadian Dollars)

10. Related party transactions (continued)

	Short-term employee benefits	Share-based payments	Total
	$	$	$
Three months ended June 30, 2020			
Directors and officers	49,740	150,542	200,282
Three months ended June 30, 2021			
Directors and officers	**48,000**	**80,753**	**128,753**

	Short-term employee benefits	Share-based payments	Total
	$	$	$
Six months ended June 30, 2020			
Directors and officers	100,097	154,481	254,584
Six months ended June 30, 2021			
Directors and officers	**100,412**	**183,594**	**284,006**

11. Financial instruments and risk management

The Company's financial instruments consist of cash, accounts payable and accrued liabilities, and warrant liability. These financial instruments are classified as financial assets at FVTPL and financial liabilities at amortized cost. The fair values of these financial instruments approximate their carrying values at June 30, 2021, due to their short-term nature.

The Company thoroughly examines the various financial instruments and risks to which it is exposed and assesses the impact and likelihood of those risks. These risks include foreign currency risk, interest rate risk, market risk, credit risk, and liquidity risk. Where material, these risks are reviewed and monitored by the Board of Directors.

12. Capital management

The Company defines capital that it manages as shareholders' equity. The Company manages its capital structure in order to have funds available to support its research and development and sustain the future development of the business. When managing capital, the Company's objective is to ensure the entity continues as a going concern as well as to maintain optimal returns to shareholders and benefits for other stakeholders. Management adjusts the capital structure as necessary in order to support its activities.

Since inception, the Company's objective in managing capital is to ensure sufficient liquidity to finance its research and development activities, general and administrative expenses, expenses associated with intellectual property protection and its overall capital expenditures. There were no changes during the six months ended June 30, 2021. The Company is not exposed to external requirements by regulatory agencies regarding its capital.

(Unaudited - expressed in Canadian Dollars)

13. Commitments

The Company has long-term arrangements with commitments that are not recognized as liabilities as at June 30, 2021 and December 31, 2020 as follows:

a) Employment Agreement

	June 30 2021	December 31 2020
	$	$
Management services – officers	192,000	192,000

The President, CEO and a director of the Company has a long-term employment agreement with the Company. The agreement has a termination clause whereby he is entitled to the equivalent of 12 times his then current monthly salary which, as of June 30, 2021, equated to $192,000.

b) Payments

In the normal course of business, the Company has committed to payments totaling $700,812 (2020 - $nil) for activities related to its clinical trial, manufacturing, collaboration programs and other regular business activities which are expected to occur over the next two years.

2,500,000 Common Shares,
Pre-Funded Warrants to Purchase
2,500,000 Common Shares and Warrants to Purchase
2,500,000 Common Shares

PROSPECTUS

, 2021

A.G.P.

Through and including , 2021 (the 25th day after the date of this prospectus), all dealers that effect transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 6. Indemnification of Directors and Officers

Under the BCBCA, we may indemnify an individual who:

a) is or was our director or officer;

b) is or was a director or officer (y) at our request, or (z) of another corporation at the time when such corporation is or was an affiliate of ours; or

c) at our request, is or was, or holds or held a position equivalent to that of a director or officer of a partnership, trust, joint venture or other unincorporated entity,

against a judgment, penalty or fine awarded or imposed in, or an amount paid in settlement of, any legal proceeding or investigative action, whether current, threatened, pending or completed, in which such eligible party is involved because of that association with us or other entity.

However, indemnification is prohibited under the BCBCA if:

a) such eligible party did not act honestly and in good faith with a view to our best interests (or the other entity, as the case may be);

b) in the case of a proceeding other than a civil proceeding, such eligible party did not have reasonable grounds for believing that such person's conduct was lawful;

c) the indemnity or payment is made under an earlier agreement to indemnify or pay expenses and, at the time that the agreement to indemnify or pay expenses was made, the Company was prohibited from giving the indemnity or paying the expenses by its articles; or

d) the indemnity or payment is made otherwise than under an earlier agreement to indemnify or pay expenses and, at the time that the indemnity or payment is made, the Company was prohibited from giving the indemnity or paying the expenses by its articles.

We may not indemnify or pay the expenses of an eligible party in respect of an action brought against an eligible party by or on behalf of us.

The BCBCA allows us to pay, as they are incurred in advance of a final disposition of a proceeding, the expenses actually and reasonably incurred by the eligible party, provided that we receive from such eligible party an undertaking to repay the amounts advanced if it is ultimately determined that such payment is prohibited. Following the final disposition of an eligible proceeding, the BCBCA requires us to pay the expenses actually and reasonably incurred by the eligible party in respect of that proceeding if the eligible party has not been reimbursed for those expenses and is wholly successful, on the merits or otherwise, in the outcome of the proceeding, or is substantially successful on the merits in the outcome of the proceeding.

Despite the foregoing, on application by us or an eligible party, a court may:

a) order us to indemnify an eligible party in respect of an eligible proceeding;

b) order us to pay some or all of the expenses incurred by an eligible party in an eligible proceeding;

c) order enforcement of or any payment under an indemnification agreement;

d) order us to pay some or all of the expenses actually and reasonably incurred by a person in obtaining the order of the court; and

e) make any other order the court considers appropriate.

The BCBCA provides that we may purchase and maintain insurance for the benefit of an eligible party (or their heirs and personal or other legal representatives of the eligible party) against any liability that may be incurred by reason of the eligible party being or having been a director or officer, or in an equivalent position of ours or that of an associated corporation.

Our articles provide that, subject to the BCBCA, we must indemnify our directors, former directors or alternate directors and his or her heirs and legal personal representatives against all judgments, penalties or fines awarded or imposed in, or an amount paid in settlement of, all legal proceedings, investigative actions or other eligible proceedings (whether current, threatened, pending or completed) to which such person is or may be liable, and we must, after the final disposition of a legal proceeding, investigative action or other eligible proceeding, pay the expenses (which includes costs, charges and expenses, including legal and other fees but does not include judgments, penalties, fines or amounts paid in settlement of a proceeding) actually and reasonably incurred by such person in respect of that proceeding.

We have entered into indemnity agreements with our directors and certain officers which provide, among other things, that we will indemnify him or her to the fullest extent permitted by law from and against all liabilities, costs, charges and expenses incurred as a result of his or her actions in the exercise of his or her duties as a director or officer.

Prior to completion of this offering, we intend to enter into new indemnification agreements with each of our current directors and officers. The indemnification agreements will generally require that we indemnify and hold the indemnitees harmless to the greatest extent permitted by law for liabilities arising out of the indemnitees' service to us as directors and officers, if the indemnitees acted honestly and in good faith with a view to the best interests of the Company and, with respect to criminal and administrative actions or other non-civil proceedings that are enforced by monetary penalty, if the indemnitee had reasonable grounds to believe that his or her conduct was lawful. The indemnification agreements will also provide for the advancing of defense expenses to the indemnitees by us.

At present, we are not aware of any pending or threatened litigation or proceeding involving any of our directors, officers, employees or agents in which indemnification would be required or permitted.

The proposed form of Underwriting Agreement filed as Exhibit 1.1 to this Registration Statement provides for indemnification of our officers and directors by the underwriters against certain liabilities.

Item 7. Recent Sales of Unregistered Securities

Set forth below is information regarding all securities issued by us without registration under the Securities Act during the past three years after giving effect to the Proposed Share Consolidation. The information presented below does not give effect to our corporate reorganization as described in the prospectus forming part of this Registration Statement. We believe that each of such issuances was exempt from registration under the Securities Act in reliance on Section 4(2) of the Securities Act, Rule 701 and/or Regulation S under the Securities Act. No underwriter or underwriting discount or commission was involved in any of the transactions set forth in this Item 7.

Common Share Issuances

- On February 28, 2020, we issued 1,555,317 of our common shares in a private placement, at a price of $1.64 per share, for an aggregate offering price of $2,556,320.
- On February 9, 2021, we issued 2,085,714 of our common shares in a private placement, at a price of $2.94 per share, for an aggregate offering price of $6,121,572.
- Since January 1, 2021, we have issued 350,197 of our common shares pursuant to the exercise of warrants, with exercise prices ranging from $1.64 to $1.76 per share, for aggregate consideration of $1,014,006.
- On February 1, March 1, and March 31, 2021, we issued an aggregate of 25,553 of our common shares at a price of $3.35 per share, in exchange for services performed.

Stock Option Grants

- Since January 1, 2018, we have granted our employees, consultants and advisors options to purchase an aggregate of 589,778 options to acquire common shares under our equity compensation plans at exercise prices ranging from $1.64 to $5.87 per share.

Warrants

- On February 28, 2020 we issued warrants to purchase an aggregate of 1,567,042 common shares for exercise prices ranging between $1.64 to $2.94 per share, in connection with the common share issuance of the same date referenced above. As of the date of this registration statement, all of the warrants have either been exercised or have expired.
- On February 9, 2021, we issued warrants to purchase an aggregate of 2,144,005 common shares for an exercise price of $4.70 per share, in connection with the common share issuance of the same date referenced above. As of the date of this registration statement, none of the warrants have been exercised.

None of the foregoing transactions involved any underwriter, underwriting discounts or commissions or any public offering. All recipients had adequate access, through their relationships with us, to information about us. The sales of these securities were made without any general solicitation or advertising.

Item 8. Exhibits and Financial Statement Schedules

The exhibits listed in the exhibits index, appearing elsewhere in this Registration Statement, have been filed as part of this Registration Statement.

All schedules have been omitted because they are not required, are not applicable or the information is otherwise set forth in the financial statements and related notes thereto.

EXHIBIT INDEX

Exhibit No.	Description
1.1	Form of Underwriting Agreement.
3.1**	Articles and Notice of Articles of the Registrant
4.1	Form of Common Share Purchase Warrant
4.2	Form of pre-funded warrant
4.3	Form of Representative's Warrant
4.4	Form of Private Placement Warrant
5.1	Opinion of McCarthy Tétrault LLP
5.2	Opinion of Dorsey & Whitney LLP
10.1**	Investigator Initiated-Clinical Trial Agreement, dated August 3, 2020, by and between the Registrant and Icahn School of Medicine at Mount Sinai.
10.2#	Employment Agreement, dated August 1, 2021, by and between the Registrant and Allen Davidoff.
10.3**	Master Services Agreement, dated July 20, 2017, by and between the Registrant and Cato Research Canada Inc.
10.4**#	Consulting Agreement, dated February 1, 2021, by and between the Registrant and David Sans.
10.5*#	Consulting Agreement, dated March 1, 2021, by and between the Registrant and 1282803 Ontario Inc.
10.6**	Master Service and Technology Agreement, dated February 25, 2019, by and between the Registrant and Prevail InfoWorks, Inc.
10.7**	Side Letter to Master Service and Technology Agreement, dated February 24, 2020, by and between the Registrant and Prevail InfoWorks, Inc.
10.8**	Subscription Agreement, dated February 28, 2020, by and between the Registrant and Prevail Partners LLC.
10.9*	Purchase Order and Proposal for Process Development and Manufacture dated June 30, 2020, by and between the Registrant and Lonza Pharma & Biotech.
10.10**#	Consulting Agreement, dated July 1, 2021, by and between the Registrant and Next Level Consultants Inc.
10.11**%	Standard Exclusive License Agreement with Know How dated effective as of July 23, 2014, by and between the Registrant and the University of Florida Research Foundation, Inc.
10.12**#	Consulting Agreement, dated July 1, 2021, by and between the Registrant and Haworth Biopharmaceutical Consulting Services Inc.
10.13**%	Patent Rights Purchase Agreement, dated effective as of December 5, 2012, by and between the Registrant, Dr. Richard Johnson, Dr. Takahiko Nakagawa, and Revascor Inc.
10.14	Form of Warrant Agency Agreement with Continental Stock Transfer & Trust Company.
10.15	Consulting Agreement, dated March 1, 2018, by and between the Registrant and W.B. Rowlands & Co. Ltd.

21.1**	Subsidiaries of the Registrant.
23.1	Consent of Smythe LLP, an Independent Registered Public Accounting Firm.
23.2	Consent of McCarthy Tétrault LLP (included in Exhibit 5.1).
23.3	Consent of Dorsey & Whitney LLP (included in Exhibit 5.2)
24.1**	Powers of Attorney

* To be filed by amendment.
** Previously filed.
Indicates management contract or compensatory plan.
% Pursuant to Item 601(b)(10) of Regulation S-K, portions of this exhibit (indicated by asterisks) have been omitted as the registrant has determined that (1) the omitted information is not material and (2) the omitted information would likely cause competitive harm to the registrant if publicly disclosed.

Item 9. Undertakings

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the provisions described in Item 6 hereof, or otherwise, the Registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned Registrant hereby undertakes:

- To provide the underwriters specified in the underwriting agreement, at the closing, certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser

- That for purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this Registration Statement in reliance upon Rule 430A and contained in a form of prospectus filed by the Registrant pursuant to Rule 424(b)(1) or (4), or 497(h) under the Securities Act shall be deemed to be part of this Registration Statement as of the time it was declared effective.

- That for the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form F-1 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, on September 16, 2021.

XORTX Therapeutics Inc.

By: /s/ Allen Davidoff
Name: Allen Davidoff
Title: President and Chief Executive Officer

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints each of Allen Davidoff and Amar Keshri as his/her true and lawful attorney-in-fact and agent, each acting alone, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any or all amendments (including post-effective amendments) to this Registration Statement and to sign any related registration statement that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, each acting alone, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, each action alone, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

Signatures	Title	Date
/s/ Allen Davidoff Allen Davidoff	President and Chief Executive Officer and Director (Principal Executive Officer)	September 16, 2021
/s/ Amar Keshri Amar Keshri	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	September 16, 2021
* W. Bruce Rowlands	Director	September 16, 2021
* Paul Van Damme	Director	September 16, 2021
* Ian Klassen	Director	September 16, 2021
* Jacqueline Le Saux	Director	September 16, 2021
* William Farley	Director	September 16, 2021
*By: /s/ Allen Davidoff Attorney-in-fact		

AUTHORIZED REPRESENTATIVE

Pursuant to the requirements of the Securities Act of 1933, as amended, the undersigned certifies that it is the duly authorized United States representative of the registrant and has duly caused this Registration Statement on Form F-1 to be signed by the undersigned, thereunto duly authorized, on September 15, 2021.

David Sans
(Authorized Representative in the United States)

/s/ David Sans
Director of Corporate Development

Exhibit 1.1

UNDERWRITING AGREEMENT

[__], 2021

A.G.P./Alliance Global Partners
As Representative of the several Underwriters named on Schedule I attached hereto
590 Madison Avenue
New York, NY 10022

Ladies and Gentlemen:

XORTX Therapeutics Inc., a company organized under the laws of British Columbia (the "Company"), proposes to issue and sell, severally and not jointly, to A.G.P./Alliance Global Partners (the "Representative") and the other underwriters named on Schedule I hereto for which the Representative is acting as representative (the Representative and such other underwriters being collectively called the "Underwriters" or, individually, an "Underwriter") (i) an aggregate of [__] common share units (the "Common Share Units"), with each Common Share Unit consisting of (A) one common share (each a "Firm Share" and collectively the "Firm Shares"), no par value per share, of the Company (the "Shares"), and (B) a warrant to purchase [__] Shares (each a "Firm Warrant" and collectively the "Firm Warrants") and (ii) an aggregate of [ ] pre-funded warrant units (the "Pre-Funded Warrant Units"), with each Pre-Funded Warrant Unit consisting of (A) a pre-funded warrant to purchase [__] Shares at an exercise price of $0.0001 per share (each a "Pre-Funded Warrants" and collectively the "Pre-Funded Warrants") and (B) Firm Warrants to purchase [ ] Shares. The Common Share Units and the Pre-Funded Warrant Units, including the underlying Firm Shares, Firm Warrants and Pre-Funded Warrants are referred to herein as the " Firm Securities". The amount and form of the Firm Securities to be purchased by each Underwriter is set forth opposite its name on Schedule I hereto. The Company also proposes to sell to the several Underwriters, at the option of each Underwriter, up to [__] additional Shares (the "Option Shares") and/or additional warrants to purchase up to [__] Shares (the "Option Warrants" and, together with the Option Shares, the "Option Securities"). The Firm Shares and the Option Shares are collectively referred to herein as the "Offered Shares"; the Firm Warrants and the Option Warrants are collectively referred to herein as the "Warrants"; the Shares issuable upon exercise of the Warrants and the Pre-Funded Warrants are collectively referred to herein as the "Warrant Shares"; and the Firm Securities, the Option Securities and the Warrant Shares are collectively referred to herein as the "Securities." The Common Share Units and the Pre-Funded Warrant Units will be mandatorily separable immediately upon issuance. The terms of the Warrants are set forth in the form of Warrant attached hereto as Exhibit A and the terms of the Pre-Funded Warrants are set forth in the form of Pre-Funded Warrant attached hereto as Exhibit B.

The Company confirms as follows its agreements with the Representative.

1. (a) The Company represents and warrants to the Underwriters that, as of the date hereof and as of the Closing Date (as defined herein) and each Option Closing Date (as defined herein), if any:

(i) A registration statement of the Company on Form F-1 (File No. 333- 258741) in respect of the Securities and one or more pre-effective amendments thereto (collectively, the "Initial Registration Statement") have been filed with the Securities and Exchange Commission (the "Commission"); the Initial Registration Statement and any post-effective amendment thereto, each in the form heretofore delivered to you, have been declared effective by the Commission in such form; other than a registration statement, if any, increasing the size of the offering (a "Rule 462(b) Registration Statement"), filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended (the "Securities Act"), which became effective upon filing, no other document with respect to the Initial Registration Statement has heretofore been filed with the Commission; no stop order suspending the effectiveness of the Initial Registration Statement, any post-effective amendment thereto or the Rule 462(b) Registration Statement, if any, has been issued, no proceeding for that purpose has been initiated or, to the Company's knowledge, threatened by the Commission and any request on the part of the Commission for additional information from the Company has been satisfied in all material respects; any preliminary prospectus included in the Initial Registration Statement, as originally filed or as part of any amendment thereto, or filed with the Commission pursuant to Rule 424(a) of the rules and regulations of the Commission under the Securities Act is hereinafter called a "Preliminary Prospectus"; the various parts of the Initial Registration Statement and the Rule 462(b) Registration Statement, if any, including (i) all documents incorporated by reference therein, (ii) all schedules and exhibits thereto and (iii) the information contained in the form of final prospectus filed with the Commission pursuant to Rule 424(b) under the Securities Act and deemed by virtue of Rule 430A under the Securities Act to be part of the Initial Registration Statement at the time it was declared effective or such part of the Rule 462(b) Registration Statement, if any, became or hereafter becomes effective, each as amended at the time such part of the Initial Registration Statement became effective, are hereinafter collectively called the "Registration Statement"; the Preliminary Prospectus relating to the Securities that was included in the Registration Statement immediately prior to the Applicable Time (as defined in Section 1(c) hereof) is hereinafter called the "Pricing Prospectus"; such final prospectus, in the form first filed pursuant to Rule 424(b) under the Securities Act, is hereinafter called the "Prospectus"; and any "issuer free writing prospectus" as defined in Rule 433 under the Securities Act relating to the Securities is hereinafter called an "Issuer Free Writing Prospectus"; any reference to "amend", "amendment" or "supplement" with respect to the Registration Statement, the Rule 462 Registration Statement, any Preliminary Prospectus, the Pricing Prospectus, the Initial Registration Statement, the Pricing Disclosure Package (as defined below) or the Prospectus shall be deemed to refer to and include any documents filed after the effective date of the Initial Registration Statement, the Registration Statement or the Rule 462 Registration Statement or the date of such Preliminary Prospectus, the Pricing Prospectus, the Pricing Disclosure Package or the Prospectus, as the case may be under the Securities Exchange Act of 1934, as amended, and the rules and regulations of the Commission thereunder (collectively, the "Exchange Act") that are deemed to be incorporated by reference therein; all references in this Agreement to financial statements and schedules and other information which are "contained," "included" or "stated" in, or "part of" the Registration Statement, the Preliminary Prospectus, the Pricing Prospectus, the Pricing Disclosure Package or the Prospectus, and all other references of like import, shall be deemed to mean and include all such financial statements and schedules and other information which is or is deemed to be incorporated by reference in the Registration Statement, the Preliminary Prospectus, the Pricing Prospectus, the Pricing Disclosure Package or the Prospectus, as the case may be; all references in this Agreement to (i) the Registration Statement, the Preliminary Prospectus, the Pricing Prospectus or the Prospectus, any amendments or supplements to any of the foregoing, or any Issuer Free Writing Prospectus, shall include any copy thereof filed with the Commission pursuant to its Electronic Data Gathering, Analysis and Retrieval System ("EDGAR") and (ii) the Prospectus shall be deemed to include any "electronic Prospectus" provided for use in connection with the offering of the Securities as contemplated by Section 5(o) of this Agreement.

(ii) At the respective times the Initial Registration Statement, any Rule 462(b) Registration Statement and any post-effective amendments thereto became effective and at the Closing Date (and, if any Option Securities are purchased, at each Option Closing Date), the Initial Registration Statement, any Rule 462(b) Registration Statement and any amendments and supplements thereto complied and will comply in all material respects with the requirements of the Securities Act and the rules and regulations of the Commission thereunder (the "Rules and Regulations").

(iii) (1) Neither the Registration Statement nor any amendment thereto, at its effective time, as of the Applicable Time, at the Closing Date or at any Option Closing Date, contained, contains or will contain an untrue statement of a material fact or omitted, omits or will omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading; (2) the Pricing Disclosure Package, as of the Applicable Time, did not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; and (3) as of the date of the Prospectus and any amendments or supplements thereto and at the Closing Date (and, if any Option Securities are purchased, at each Option Closing Date (as defined herein)), neither the Prospectus nor any amendment or supplement thereto included or will include an untrue statement of a material fact or omitted or will omit to state a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading; provided that the representations and warranties in clauses (1), (2) and (3) above shall not apply to statements in or omissions from the Registration Statement, Pricing Disclosure Package or the Prospectus made in reliance upon and in strict conformity with information furnished to the Company in writing by the Underwriters expressly for use in the Registration Statement or the Prospectus or any amendment or supplement thereto, it being understood and agreed that the only such information provided by the Underwriters is that described as such in Section 9(b) hereof. No order preventing or suspending the use of any Preliminary Prospectus, the Pricing Prospectus, the Prospectus or any free writing prospectus has been issued by the Commission.

As used herein, "Applicable Time" is [ ]:00 [a.m/p.m.] (Eastern Time) on [__] [__], 2021. As used herein, "Pricing Disclosure Package" means the Preliminary Prospectus, as amended or supplemented immediately prior to the Applicable Time, together with the Issuer Free Writing Prospectus, if any, identified on Schedule II hereto and the pricing information set forth on Schedule C hereto. As used herein, "Road Show" means a "road show" (as defined in Rule 433 under the Securities Act) relating to the offering of the Securities contemplated hereby that is a "written communication" (as defined in Rule 405 under the Securities Act).

(iv) Each Preliminary Prospectus, Pricing Prospectus, and the Prospectus filed as part of the Initial Registration Statement as originally filed or as part of any amendment thereto, or filed pursuant to Rule 424 under the Securities Act, complied when so filed in all material respects with the requirements of the Securities Act and the Rules and Regulations and each Preliminary Prospectus, Pricing Prospectus, and the Prospectus delivered to the Underwriters for use in connection with this offering was identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T. The documents incorporated or deemed to be incorporated by reference in the Registration Statement, the Pricing Prospectus and the Prospectus, at the time they were or hereafter are filed with the Commission, or became effective under the Exchange Act, as the case may be, complied and will comply in all material respects with the requirements of the Exchange Act. There are no statutes, regulations, contracts or other documents required to be described in the Preliminary Prospectus, Pricing Prospectus, or the Prospectus or to be filed as an exhibit to the Registration Statement which have not been described or filed as required.

(v) Free Writing Prospectuses; Road Show. The Company is not, and at the time of filing the Initial Registration Statement, was not an "ineligible issuer," as defined under Rule 405 under the Securities Act. Each Issuer Free Writing Prospectus that the Company is required to file pursuant to Rule 433(d) under the Securities Act has been, or will be, filed with the Commission in accordance with the requirements of the Securities Act. Each Issuer Free Writing Prospectus that the Company has filed, or is required to file, pursuant to Rule 433(d) under the Securities Act or that was prepared by or on behalf of or used or referred to by the Company complies or will comply in all material respects with the requirements of Rule 433 under the Securities Act, including timely filing with the Commission or retention where required and legending, and each such Issuer Free Writing Prospectus, as of its issue date and at all subsequent times through the completion of the public offer and sale of the Securities did not, does not and will not include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement, the Prospectus or any preliminary prospectus and not superseded or modified. Except for the Issuer Free Writing Prospectus, if any, identified in Schedule II, and electronic road shows, if any, furnished to you before first use, the Company has not prepared, used or referred to, and will not, without your prior written consent, prepare, use or refer to, any free writing prospectus as defined in Rule 405 under the Securities Act. Each Road Show, when considered together with the Pricing Disclosure Package, does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(vi) Distribution of Offering Material By the Company. Prior to the later of (i) the expiration or termination of the option granted to the several Underwriters in Section 2 and (ii) the completion of each Underwriter's distribution of the Securities offered hereby, the Company has not distributed and will not distribute any offering material in connection with the offering and sale of the Securities other than the Registration Statement, the Pricing Disclosure Package and the Prospectus.

(vii) Organization and Qualification. Each of the Company and its subsidiaries (each, a "Subsidiary" and collectively, the "Subsidiaries") is an entity duly incorporated or otherwise organized, validly existing and in good standing (if applicable in such jurisdiction) under the laws of the jurisdiction of its incorporation or organization, with the requisite power and authority to own and use its properties and assets and to carry on its business as currently conducted. Neither the Company nor its Subsidiaries is in violation nor default of any of the provisions of its respective certificate or articles of incorporation, bylaws or other organizational or charter documents. Each of the Company and the Subsidiaries is duly qualified to conduct business and is in good standing as a foreign corporation or other entity in each jurisdiction in which the nature of the business conducted or property owned by it makes such qualification necessary, except where the failure to so qualify or be in good standing would not have a material adverse effect on the business, management, properties, operations, condition (financial or otherwise) or results of operations of the Company and its Subsidiaries, taken as a whole (a "Material Adverse Effect"); and no action, claim, suit, investigation or proceeding (including, without limitation, an informal investigation or partial proceeding, such as a deposition), whether commenced or threatened (each a "Proceeding") to the Company's knowledge, has been instituted in any such jurisdiction revoking, limiting or curtailing or seeking to revoke, limit or curtail such power and authority or qualification.

(viii) Authorization; Enforcement. The Company has the requisite corporate power and authority to enter into and to consummate the transactions contemplated by this Agreement, the Warrants, the Pre-Funded Warrants and the Representative's Warrant Agreement and otherwise to carry out its obligations hereunder and thereunder. The execution and delivery of this Agreement, the Warrants, the Pre-Funded Warrants and the Representative's Warrant Agreement by the Company and the consummation by it of the transactions contemplated hereby and thereby have been duly authorized by all necessary corporate action on the part of the Company and no further action is required by the Company, the Board of Directors or the Company's shareholders in connection herewith or therewith except the Required Approvals (as defined below). This Agreement, the Warrants, the Pre-Funded Warrants and the Representative's Warrant Agreement to which it is a party have been (or upon delivery will have been) duly executed by the Company and, when delivered in accordance with the terms hereof and thereof, will constitute valid and binding obligations of the Company enforceable against the Company in accordance with their terms, except (i) as limited by general equitable principles and applicable bankruptcy, insolvency, reorganization, moratorium and other laws of general application affecting enforcement of creditors' rights generally, (ii) as limited by laws relating to the availability of specific performance, injunctive relief or other equitable remedies and (iii) insofar as indemnification and contribution provisions may be limited by applicable law.

(ix) No Conflicts. The execution, delivery and performance by the Company of this Agreement, the Warrants, the Pre-Funded Warrants and the Representative's Warrant Agreement to which it is a party, the issuance and sale of the Securities and the Representative's Warrant Shares and the consummation by it of the transactions contemplated hereby and thereby do not and will not: (i) result in a breach of, or conflict with any of the terms and provisions of, or constitute a default (or an event that with notice or lapse of time or both would become a default) under, or result in the creation of any lien, charge, pledge, security interest, encumbrance, right of first refusal, preemptive right or other restriction (collectively, "Liens") upon any property or assets of the Company or any Subsidiary, or give to others any rights of termination, amendment, acceleration or cancellation (with or without notice, lapse of time or both) of, any agreement, credit facility, debt or other instrument (evidencing a Company or Subsidiary debt or otherwise) or other understanding to which the Company or any Subsidiary is a party or by which any property or asset of the Company or any Subsidiary is bound or affected; (ii) result in any violation of the provisions of the Company's articles of association or the bylaws of the Company; or (iii) result in a violation of any existing applicable law, rule, regulation, order, judgment, injunction, decree or other restriction of any court or governmental authority to which the Company or a Subsidiary is subject (including federal and state securities laws and regulations), or by which any property or asset of the Company or a Subsidiary is bound or affected; except in the case of clauses (i) and (iii) above, for such breaches, conflicts or violations which would not reasonably be expected to result in a Material Adverse Effect.

(x) Filings, Consents and Approvals. The Company is not required to obtain any consent, waiver, authorization or order of, give any notice to, or make any filing or registration with, any court or other federal, state, local or other governmental authority or other person or entity in connection with the execution, delivery and performance by the Company of this Agreement, the Warrants, the Pre-Funded Warrants and the Representative's Warrant Agreement, other than: (i) the registration under the Securities Act of the Securities and such consents, approvals, authorizations, registrations or qualifications as may be required under state securities, Blue Sky laws or the rules and regulations of the [Nasdaq Stock Market, LLC/New York Stock Exchange] or the Financial Industry Regulatory Authority Inc. ("FINRA") or the Canadian Securities Exchange ("CSE"), in connection with the purchase and distribution of the Securities by the Underwriters, (ii) such filings as are required to be made under the securities acts or similar statutes of each of the provinces of British Columbia, Alberta and Ontario and all regulations, rules, policy statements, notices and blanket orders or rulings thereunder applicable to the Company (the "Canadian Securities Laws") and (iii) any notice of the transaction contemplated hereby under Canadian Securities Laws, should Canadian Company Counsel determine such notice is required (collectively, the "Required Approvals").

(xi) Issuance of the Securities. The Shares and the Warrant Shares which may be issued and sold by the Company to the several Underwriters hereunder have been duly authorized and, when issued, delivered and paid for by the Underwriters in accordance with the terms of this Agreement, will be validly issued and fully paid and non-assessable and, except as waived with respect to the offering of the Securities hereby, the issuance of such Shares is not subject to any preemptive or similar rights. The Representative's Warrant Shares and the Warrant Shares when issued, paid for and delivered upon due exercise of the Warrants, the Pre-Funded Warrants or the Representative's Warrants, as applicable, will be duly authorized and validly issued, fully paid and non-assessable, free and clear from any preemptive or similar rights, and will be issued in compliance with Canadian Securities Laws and all applicable securities law. The Warrant Shares and Representative's Warrant Shares have been reserved for issuance. The Securities and the Representative's Warrants, when issued, will conform in all material respects to the descriptions thereof set forth in the Registration Statement, in the Pricing Disclosure Package and in the Prospectus.

(xii) Capitalization. All of the outstanding share capital of the Company is duly authorized, validly issued, fully paid and nonassessable, has been issued in compliance with all Canadian Securities Laws, all federal and state securities laws, and none of such outstanding shares was issued in violation of any preemptive rights or similar rights to subscribe for or purchase securities. The Company has an authorized, issued and outstanding capitalization as set forth in the Registration Statement, Preliminary Prospectus and the Prospectus as of the dates referred to therein (other than the grant of additional options under the Company's existing option plans, or changes in the number of outstanding Shares of the Company due to the issuance of Shares upon the exercise or conversion of securities exercisable for, or convertible into, Shares outstanding on the date hereof) and such authorized share capital conforms in all material respects to the description thereof set forth in the Registration Statement, the Pricing Disclosure Package and the Prospectus. The description of the securities of the Company in the Registration Statement, the Pricing Disclosure Package and the Prospectus is complete and accurate in all material respects. Except as set forth in the Registration Statement, Preliminary Prospectus and the Prospectus, no Person has any right of first refusal, preemptive right, right of participation, or any similar right to participate in the transactions contemplated by the Underwriting Agreement, Warrants, the Pre-Funded Warrants and the Representative's Warrant Agreement. Except as disclosed in or contemplated by the Registration Statement, the Pricing Disclosure Package or the Prospectus, as of the date referred to therein, there are no outstanding options, warrants, scrip rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities, rights or obligations convertible into or exercisable or exchangeable for, or giving any Person any right to subscribe for or acquire, any Shares or any securities of the Company or the Subsidiaries which would entitle the holder thereof to acquire at any time Shares, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Shares ("Share Equivalents") or the capital stock of any Subsidiary, or contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to issue additional Shares or Share Equivalents or capital stock of any Subsidiary. Except as disclosed in the Registration Statement, Pricing Disclosure Package or Prospectus, the issuance and sale of the Securities will not obligate the Company or any Subsidiary to issue Shares or Share Equivalents or other securities to any person or entity (other than as set forth in this Agreement) and will not result in a right of any holder of Company securities to adjust the exercise, conversion, exchange or reset price under any of such securities. There are no outstanding securities or instruments of the Company or any Subsidiary that contain any redemption or similar provisions, and there are no contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to redeem a security of the Company or such Subsidiary. The Company does not have any share appreciation rights or "phantom share" plans or any similar plan or agreement. Other than the Required Approvals, no further approval or authorization of any shareholder, the Board of Directors or others is required for the issuance and sale of the Securities. There are no shareholders agreements, voting agreements or other similar agreements with respect to the Company's share capital to which the Company is a party or, to the knowledge of the Company, between or among any of the Company's shareholders.

(xiii) Canadian and SEC Reports; Financial Statements. The Company has filed all reports, schedules, forms, statements and other documents required or permitted, including reports under Canadian Securities Laws and on Form 6-K, to be filed by the Company under the Securities Act and the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof, for the two years preceding the date hereof (or such shorter period as the Company was required by law or regulation to file such material) (the foregoing materials, including the exhibits thereto and documents incorporated by reference therein, together with the Registration Statement, Pricing Disclosure Package and the Prospectus, being collectively referred to herein as the "Public Reports") on a timely basis or has received a valid extension of such time of filing and has filed any such Public Reports prior to the expiration of any such extension. As of their respective dates, the Public Reports complied in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable, and none of the Public Reports, when filed, contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. Smythe LLP, an independent registered public accounting firm with respect to the Company as required by the Securities Act and the Exchange Act, who have audited and reviewed certain financial statements of the Company, are independent public accountants as required by the Securities Act and the Rules and Regulations. Such financial statements, together with related schedules and notes, incorporated in the Registration Statement, Pricing Disclosure Package and Prospectus comply in all material respects with the requirements of the Securities Act and present fairly the consolidated financial position, results of operations and changes in financial position of the Company on the basis stated in the Registration Statement at the respective dates or for the respective periods to which they apply. Such financial statements have been prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board ("IFRS") applied on a consistent basis during the periods involved, except as may be otherwise specified in such financial statements or the notes thereto and except that unaudited financial statements may not contain all footnotes required by IFRS, and fairly present in all material respects the financial position of the Company and its consolidated Subsidiaries as of and for the dates thereof and the results of operations and cash flows for the periods then ended, subject, in the case of unaudited statements, to normal, immaterial, year-end audit adjustments. The interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement fairly presents the information called for in all material respects and has been prepared in accordance with the Commission's rules and guidelines applicable thereto.

(xiv) Material Changes; Undisclosed Events, Liabilities or Developments. Since the date of the latest audited financial statements included within the Registration Statement, except as specifically disclosed in the Registration Statement, Pricing Disclosure Package or Prospectus (i) there has been no event, occurrence or development that has had or that could reasonably be expected to result in a Material Adverse Effect, (ii) the Company has not incurred any liabilities (contingent or otherwise) other than (A) trade payables and accrued expenses incurred in the ordinary course of business consistent with past practice and (B) liabilities not required to be reflected in the Company's financial statements pursuant to IFRS or disclosed in the Public Reports, (iii) the Company has not altered its method of accounting, (iv) the Company has not declared or made any dividend or distribution of cash or other property to its shareholders or purchased, redeemed or made any agreements to purchase or redeem any shares of its share capital and (v) the Company has not issued any equity securities to any officer, director or affiliate, except pursuant to existing Company equity plans. The Company does not have pending before the Commission or under Canadian Securities Laws any request for confidential treatment of information. Except as disclosed in the Registration Statement, Pricing Disclosure Package or Prospectus and except for the issuance of the Securities contemplated by this Agreement, since the date of the latest audited financial statements included within the Registration Statement, to the Company's knowledge, no event, liability, fact, circumstance, occurrence or development has occurred or exists or is reasonably expected to occur or exist with respect to the Company or its Subsidiaries or their respective businesses, properties, operations, assets or financial condition, that would be required to be disclosed by the Company under applicable securities laws.

(xv) Litigation. Except as set forth in the Registration Statement, Pricing Disclosure Package or Prospectus, there is no Proceeding pending or, to the knowledge of the Company, threatened against or affecting the Company, any Subsidiary or any of their respective properties before or by any court, arbitrator, governmental or administrative agency or regulatory authority (federal, state, county, local or foreign) (collectively, an "Action") which (i) adversely affects or challenges the legality, validity or enforceability of any of this Agreement, the Warrants or the Pre-Funded Warrants or the Securities or (ii) could, if there were an unfavorable decision, have or reasonably be expected to result in a Material Adverse Effect. Neither the Company nor any Subsidiary, nor, to the Company's knowledge, any director or officer thereof, is or has been the subject of any Action involving a claim of violation of or liability under federal, state or foreign securities laws or a claim of breach of fiduciary duty which would, if there were an unfavorable decision, have or reasonably be expected to result in a Material Adverse Effect. There has not been, and to the knowledge of the Company, there is not pending or contemplated, any investigation by the Commission involving the Company or any current or former director or officer of the Company. The Commission has not issued any stop order or other order suspending the effectiveness of any registration statement filed by the Company or any Subsidiary under the Exchange Act or the Securities Act.

(xvi) Labor Relations. No material labor dispute exists or, to the knowledge of the Company, is imminent with respect to any of the employees of the Company, which could reasonably be expected to result in a Material Adverse Effect. To the knowledge of the Company, none of the Company's or its Subsidiaries' employees is a member of a union that relates to such employee's relationship with the Company or such Subsidiary, and neither the Company nor any of its Subsidiaries is a party to a collective bargaining agreement, other than by virtue of extension orders, and the Company and its Subsidiaries believe that their relationships with their employees are good. To the knowledge of the Company, no executive officer of the Company or any Subsidiary, is, or is now expected to be, in violation of any material term of any employment contract, confidentiality, disclosure or proprietary information agreement or non-competition agreement, or any other contract or agreement or any restrictive covenant in favor of any third party, and to the knowledge of the Company, the continued employment of each such executive officer does not subject the Company or any of its Subsidiaries to any liability with respect to any of the foregoing matters. The Company and its Subsidiaries are in compliance with all applicable Canadian and U.S. federal, state, local and foreign laws and regulations relating to employment and employment practices, terms and conditions of employment and wages and hours, except where the failure to be in compliance could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(xvii) Compliance. Except as disclosed in the Registration Statement, Pricing Disclosure Package or Prospectus, neither the Company nor any Subsidiary: (i) is in default under or in violation of (and no event has occurred that has not been waived that, with notice or lapse of time or both, would result in a default by the Company or any Subsidiary under), nor has the Company or any Subsidiary received notice of a claim that it is in default under or that it is in violation of, any indenture, loan or credit agreement or any other agreement or instrument to which it is a party or by which it or any of its properties is bound (whether or not such default or violation has been waived), (ii) is in violation of any judgment, decree or order of any court, arbitrator or other governmental authority or (iii) is or has been in violation of any statute, rule, ordinance or regulation of any governmental authority, including without limitation all foreign, federal, state and local laws relating to taxes, environmental protection, occupational health and safety, product quality and safety and employment and labor matters, except in each case as could not have or reasonably be expected to result in a Material Adverse Effect.

(xviii) Environmental Laws. The Company and its Subsidiaries (i) are in material compliance with all material federal, state, local and foreign laws relating to pollution or protection of human health or the environment (including ambient air, surface water, groundwater, land surface or subsurface strata), including laws relating to emissions, discharges, releases or threatened releases of chemicals, pollutants, contaminants, or toxic or hazardous substances or wastes (collectively, "Hazardous Materials") into the environment, or otherwise relating to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Hazardous Materials, as well as all authorizations, codes, decrees, demands, or demand letters, injunctions, judgments, licenses, notices or notice letters, orders, permits, plans or regulations, issued, entered, promulgated or approved thereunder ("Environmental Laws"); (ii) have received all permits, licenses or other approvals required of them under applicable Environmental Laws for their respective businesses; and (iii) are in compliance with all terms and conditions of any such permit, license or approval, where in each clause (i), (ii) and (iii), the failure to so comply could be reasonably expected to have, individually or in the aggregate, a Material Adverse Effect.

(xix) Title to Assets. The Company and the Subsidiaries have good and marketable title in fee simple to all real property owned by them and good and marketable title in all personal property owned by them that is material to the business of the Company and the Subsidiaries, in each case free and clear of all Liens. Any real property and facilities held under lease by the Company and the Subsidiaries are held by them under valid, subsisting and enforceable leases with which the Company and the Subsidiaries are in compliance in all material respects.

(xx) Intellectual Property. The Company and the Subsidiaries have, or have rights to use, all patents, patent applications, trademarks, trademark applications, service marks, trade names, trade secrets, inventions, copyrights, licenses and other intellectual property rights and similar rights as described in the Registration Statement, Pricing Disclosure Package and Prospectus as necessary or required for use in connection with their respective businesses and which the failure to so have could have a Material Adverse Effect (collectively, the "Intellectual Property Rights"). None of, and neither the Company nor any Subsidiary has received a notice (written or otherwise) that any of, the material Intellectual Property Rights has expired, terminated or been abandoned, or is expected to expire or terminate or be abandoned, within two (2) years from the date of this Agreement. Neither the Company nor any Subsidiary has received, since the date of the latest audited financial statements included within the Registration Statement, a written notice of a claim or otherwise has any knowledge that the Intellectual Property Rights violate or infringe (and will not infringe) upon the rights of any Person, except as could not have or reasonably be expected to not have a Material Adverse Effect. To the knowledge of the Company, all such Intellectual Property Rights are enforceable. The Company and its Subsidiaries have taken reasonable security measures to protect the secrecy and confidentiality of all of their intellectual properties, except where failure to do so could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. The Company has no knowledge of any facts that would preclude it from having valid license rights or clear title to the Intellectual Property Rights. The Company has no knowledge that it lacks or will be unable to obtain any rights or licenses to use all Intellectual Property Rights that are necessary to conduct its business.

(xxi) Health Care Laws. The Company (i) is and at all times has been in compliance in all material respects with all applicable Health Care Laws, rules and regulations in the United States and Canada or any other jurisdiction, including, without limitation the Federal Food, Drug and Cosmetic Act (21 U.S.C. §301 et seq.), all applicable federal, state, local and all foreign civil and criminal laws relating to health care fraud and abuse, including but not limited to the federal Anti-Kickback Statute (42 U.S.C. §1320a-7b(b)), the civil False Claims Act (31 U.S.C. §§ 3729 et seq.), criminal false statements (42 U.S.C. §1320a-7b(a)), the health care fraud criminal provisions under the Health Insurance Portability and Accountability Act of 1996 ("HIPAA") (42 U.S.C. §§ 1320d et seq.), the exclusion laws (42 U.S.C. § 1320a-7), the U.S. Physician Payments Sunshine Act (42 U.S.C. § 1320a-7h), the civil monetary penalties law (42 U.S.C. §1320a-7a), Medicare (Title XVIII of the Social Security Act), Medicaid (Title XIX of the Social Security Act), HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009 (42 U.S.C. §§ 17921 et seq.), the Patient Protection and Affordable Care Act (Pub. Law 111-148), as amended by the Health Care and Education Affordability Reconciliation Act of 2010 (Pub. Law 111-152), the regulations promulgated pursuant to such laws, and any successor government programs and comparable state laws, regulations relating to Good Clinical Practices and Good Laboratory Practices, and all other local, state, federal, national, supranational and foreign laws applicable to the regulation of the ownership, testing, development, manufacture, packaging, processing, use, distribution, marketing, advertising, labeling, promotion, sale, offer for sale, storage, import, export or disposal of any product manufactured or distributed by or for the Company (collectively, the "Health Care Laws"); (ii) has not received any notice from any court or arbitrator or governmental or regulatory authority or third party alleging or asserting noncompliance with any Health Care Laws or any licenses, exemptions, certificates, approvals, clearances, authorizations, permits, registrations and supplements or amendments thereto required by any such Health Care Laws ("Authorizations"); (iii) possesses all necessary Authorizations and such Authorizations are valid and in full force and effect and are not in violation of any term of any such Authorizations; (iv) has not received written notice of any claim, action, suit, proceeding, hearing, enforcement, investigation arbitration or other action from any court or arbitrator or governmental or regulatory authority or third party alleging that any product operation or activity is in violation of any Health Care Laws or Authorizations nor to the knowledge of the Company, is any such claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action threatened; (v) has not received any written notice that any court or arbitrator or governmental or regulatory authority has taken, is taking or intends to take, action to limit, suspend, materially modify or revoke any Authorizations nor is any such limitation, suspension, modification or revocation threatened; (vi) has filed, obtained, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Health Care Laws or Authorizations and that all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete and accurate on the date filed (or were corrected or supplemented by a subsequent submission); and (vii) has not, nor have any of its officers or directors, nor, to the knowledge of the Company, have any of its employees, been excluded, suspended or debarred from participation in any U.S. state or federal health care program or human clinical research or subject to a governmental inquiry, investigation, proceeding, or other any other Action that could reasonably be expected to result in debarment, suspension, or exclusion; and (viii) is not a party to any corporate integrity agreements, monitoring agreements, consent decrees, settlement orders, or similar agreements with or imposed by any governmental or regulatory authority.

(xxii) Regulatory Matters. The clinical trials and pre-clinical studies conducted by or on behalf of or sponsored by the Company, or in which the Company has participated, that are described in the Registration Statement, the Disclosure Package and the Prospectus or the results of which are referred to in the Registration Statement, the Disclosure Package and the Prospectus, as applicable, and are intended to be submitted to Regulatory Authorities as a basis for product approval, were and, if still pending, are being conducted in all material respects in accordance with standard medical and scientific research procedures and all applicable statutes, rules and regulations of the United States Food and Drug Administration (the "FDA") and comparable drug regulatory agencies outside of the United States to which they are subject including but not limited to Health Canada and the European Medicines Agency (collectively, the "Regulatory Authorities") and current Good Clinical Practices and Good Laboratory Practices; the descriptions in the Registration Statement, the Disclosure Package or the Prospectus of the results of such studies and trials are accurate and complete in all material respects and fairly present the data derived from such studies and trials; the Company has no knowledge of any other studies or trials the results of which are inconsistent with or otherwise call into question the results described or referred to in the Registration Statement, the Disclosure Package and the Prospectus; the Company is in compliance in all material respects with all applicable statutes, rules and regulations of the Regulatory Authorities and has not received any written notices, correspondence or other communication from the Regulatory Authorities or any other governmental agency which could lead to the termination or suspension of any clinical trials or pre-clinical studies that are described in the Registration Statement, the Disclosure Package and the Prospectus or the results of which are referred to in the Registration Statement, Disclosure Package or the Prospectus, and, to the Company's knowledge, there are no reasonable grounds for same.

(xxiii) Permits. The Company possesses all licenses, certificates, permits and other authorizations (collectively, "Permits") issued by, and has made all declarations and filings with, the applicable federal, state, local or foreign governmental or regulatory authorities that are necessary for the ownership or lease of its properties or the conduct of its businesses as described in the Registration Statement, the Disclosure Package and the Prospectus, or to permit all clinical trials and nonclinical studies conducted by or on behalf of the Company, including, without limitation, all necessary FDA and applicable foreign regulatory agency approvals; the Company is not in violation of, or in default under, any such Permit; and the Company has not received notice of any revocation, suspension or modification of any such Permit and does not have any reason to believe that any such Permit will not be renewed in the ordinary course. The Company (i) is, and at all times has been, in compliance with all applicable laws; and (ii) has not received any FDA Form 483, written notice of adverse finding, warning letter, untitled letter or other correspondence or written notice from any court or arbitrator or governmental or regulatory authority alleging or asserting non-compliance with (A) any applicable laws or (B) any Permits required by any such applicable Laws.

(xxiv) Insurance. The Company and the Subsidiaries are insured by insurers of recognized financial responsibility against such losses and risks and in such amounts as are prudent and customary in the businesses in which the Company and the Subsidiaries are engaged. Neither the Company nor any Subsidiary has any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business. Such renewal may result in a significant increase in cost.

(xxv) Transactions With Affiliates and Employees. Except as set forth in the Registration Statement, Pricing Disclosure Package and Prospectus, none of the officers or directors of the Company or any Subsidiary and, to the knowledge of the Company, none of the employees of the Company or any Subsidiary is presently a party to any transaction with the Company or any Subsidiary (other than for services as employees, officers and directors), including any contract, agreement or other arrangement providing for the furnishing of services to or by, providing for rental of real or personal property to or from, providing for the borrowing of money from or lending of money to or otherwise requiring payments to or from any officer, director or such employee or, to the knowledge of the Company, any entity in which any officer, director, or any such employee has a substantial interest or is an officer, director, trustee, shareholder, member or partner, in each case in excess of $120,000 other than for (i) payment of salary or consulting fees for services rendered, (ii) reimbursement for expenses incurred on behalf of the Company and (iii) other employee benefits, including share option or other agreements under any equity plan of the Company.

(xxvi) Sarbanes-Oxley; Internal Accounting Controls. The Company and the Subsidiaries are in material compliance with any and all applicable requirements of the Sarbanes-Oxley Act of 2002 that are effective as of the date hereof and as of the Closing Date and Option Closing Date and are applicable to the Company and the Subsidiaries, and any and all applicable rules and regulations promulgated by the Commission thereunder that are effective as of the date hereof and as of the Closing Date and Option Closing Date. The Company and the Subsidiaries maintain a system of internal accounting controls designed to provide reasonable assurance that: (i) transactions are executed in accordance with management's general or specific authorizations, (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with IFRS and to maintain asset accountability, (iii) access to assets is permitted only in accordance with management's general or specific authorization, and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. The Company and the Subsidiaries have established disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the Company and the Subsidiaries and designed such disclosure controls and procedures to ensure that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms. The Company's certifying officers have evaluated the effectiveness of the disclosure controls and procedures of the Company and the Subsidiaries as of the end of the period covered by the Registration Statement (such date, the "Evaluation Date"). The Company presented in the Registration Statement the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the Evaluation Date. Since the Evaluation Date, there have been no changes in the internal control over financial reporting (as such term is defined in the Exchange Act) of the Company and its Subsidiaries that have materially affected, or is reasonably likely to materially affect, the internal control over financial reporting of the Company and its Subsidiaries.

(xxvii) Certain Fees. No brokerage or finder's fees or commissions are or will be payable by the Company or any of the Subsidiaries to any broker, financial advisor or consultant, finder, placement agent, investment banker or bank in connection with the transactions herein contemplated, except as may otherwise exist with respect to or pursuant to this Agreement.

(xxviii) No Reliance. The Company has not relied upon the Underwriters or legal counsel for the Underwriters for any legal, tax or accounting advice in connection with the offering and sale of the Securities.

(xxix) Investment Company. The Company is not and, after giving effect to the offering and sale of the Securities by the Company as contemplated herein and the application of the net proceeds therefrom received by the Company, including the proceeds received upon the exercise of the Warrants and the Pre-Funded Warrants, as described in the Pricing Prospectus, will not be required to register as an "investment company", as such term is defined in the Investment Company Act of 1940, as amended (the "Investment Company Act").

(xxx) Registration Rights. Except as disclosed in the Registration Statement, Pricing Disclosure Package or Prospectus, no person or entity has any right to cause the Company or any Subsidiary to effect the registration under the Securities Act of any securities of the Company or any Subsidiary.

(xxxi) Listing and Maintenance Requirements. The Shares are registered pursuant to Section 12(b) or 12(g) of the Exchange Act, and the Company has taken no action designed to, or which to its knowledge is likely to have the effect of, terminating the registration of the Shares under the Exchange Act nor has the Company received any notification that the Commission is contemplating terminating such registration. Except as disclosed in the Registration Statement, Pricing Disclosure Package or Prospectus, the Company has not, in the 12 months preceding the date hereof, received notice from [the Nasdaq Capital Market/NYSE American], the CSE to the effect that the Company is not in compliance with the listing or maintenance requirements of such exchange. The Company is, and, after giving effect to the receipt by the Company of the proceeds from the sale of the Securities hereunder, has no reason to believe that it will not in the foreseeable future continue to be, in compliance with all such listing and maintenance requirements. The Shares are currently eligible for electronic transfer through The Depository Trust Company or another established clearing corporation and the Company is current in payment of the fees to The Depository Trust Company (or such other established clearing corporation) in connection with such electronic transfer.

(xxxii) Application of Takeover Protections. The Company and the Board of Directors have taken all necessary action, if any, in order to render inapplicable any control share acquisition, business combination, poison pill (including any distribution under a rights agreement) or other similar anti-takeover provision under the Company's articles of association (or similar charter documents) or the laws of its jurisdiction of incorporation that is or could become applicable to the Underwriters as a result of the Underwriters and the Company fulfilling their obligations or exercising their rights under this Agreement, including without limitation as a result of the Company's issuance of the Securities.

(xxxiii) Solvency. Based on the consolidated financial condition of the Company as of the Closing Date and Option Closing Date, after giving effect to the receipt by the Company of the proceeds from the sale of the Securities hereunder, (i) the fair saleable value of the Company's assets exceeds the amount that will be required to be paid on or in respect of the Company's existing debts and other liabilities (including known contingent liabilities) as they mature, (ii) the Company's assets do not constitute unreasonably small capital to carry on its business as now conducted and as proposed to be conducted including its capital needs taking into account the particular capital requirements of the business conducted by the Company, consolidated and projected capital requirements and capital availability thereof, and (iii) the current cash flow of the Company, together with the proceeds the Company would receive, were it to liquidate all of its assets, after taking into account all anticipated uses of the cash, would be sufficient to pay all amounts on or in respect of its liabilities when such amounts are required to be paid. The Company does not intend to incur debts beyond its ability to pay such debts as they mature (taking into account the timing and amounts of cash to be payable on or in respect of its debt). After giving effect to the receipt by the Company of the proceeds for the sale of the Securities, the Company has no knowledge of any facts or circumstances which lead it to believe that it will file for reorganization or liquidation under the bankruptcy or reorganization laws of any jurisdiction within one year from the Closing Date or Option Closing Date.

(xxxiv) Tax Status. Except for matters that would not, individually or in the aggregate, have or reasonably be expected to result in a Material Adverse Effect, the Company and its Subsidiaries each (i) has made or filed all applicable United States federal, state and local income and all applicable foreign income and franchise tax returns, reports and declarations required by any jurisdiction to which it is subject, (ii) has paid all taxes and other governmental assessments and charges that are material in amount, shown or determined to be due on such returns, reports and declarations and (iii) has set aside on its books provision reasonably adequate for the payment of all material taxes for periods subsequent to the periods to which such returns, reports or declarations apply. There are no unpaid taxes in any material amount claimed to be due by the taxing authority of any jurisdiction, and the officers of the Company or of any Subsidiary know of no basis for any such claim.

(xxxv) Foreign Corrupt Practices. Neither the Company nor any Subsidiary, nor to the knowledge of the Company or any Subsidiary, any agent or other person acting on behalf of the Company or any Subsidiary, has (i) directly or indirectly, used any funds for unlawful contributions, gifts, entertainment or other unlawful expenses related to foreign or domestic political activity, (ii) made any unlawful payment to foreign or domestic government officials or employees or to any foreign or domestic political parties or campaigns from corporate funds, or (iii) violated in any material respect any provision of the Foreign Corrupt Practices Act of 1977, as amended, or any provision of the Corruption of Foreign Public Officials Act (Canada).

(xxxvi) Regulation M Compliance. Neither the Company nor any of its subsidiaries has taken, directly or indirectly, any action designed to or that might cause or result in stabilization or manipulation of the price of the Company's Shares or of any other securities, including any "reference security" (as defined in Rule 100 of Regulation M under the Exchange Act ("Regulation M")) with respect to the Shares, whether to facilitate the sale or resale of the Securities or otherwise, and has taken no action which would directly or indirectly violate Regulation M or applicable foreign securities laws and rules.

(xxxvii) Security. The Company and the Subsidiaries have complied, and are presently in compliance, with their privacy and securities policies, and with all applicable obligations, laws and regulations regarding the collection, use, transfer, storage, protection, disposal or disclosure of personally identifiable information or any other information collected from or provided by third parties, except to the extent that any such failure would not reasonably be expected to have a Material Adverse Effect. The Company and the Subsidiaries have taken commercially reasonable steps to protect information technology systems and data used in connection with the operation of the Company and the Subsidiaries. The Company and the Subsidiaries have used commercially reasonable efforts to establish, and have established, commercially reasonable disaster recovery and security plans, procedures and facilities for the business, including without limitation, for the information technology systems and data held by or for the Company or any of the Subsidiaries. There has been no material security breach or attack or other compromise of or relating to any such information technology system or data that would reasonably expected to have a Material Adverse Effect.

(xxxviii) Reporting Issuer Status. The Company is a reporting issuer in the provinces of British Columbia, Alberta and Ontario and is not in default in any material respect of any requirement under the Canadian Securities Laws and is not on the list of defaulting issuers maintained by the applicable Canadian securities regulators.

(xxxix) Office of Foreign Assets Control. Neither the Company nor any Subsidiary nor, to the Company's knowledge, any director, officer, agent, or employee of the Company or any Subsidiary is currently subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Treasury Department ("OFAC").

(xl) U.S. Real Property Holding Corporation. The Company is not and has never been a U.S. real property holding corporation within the meaning of Section 897 of the U.S. Internal Revenue Code of 1986, as amended (the "Code").

(xli) Bank Holding Company Act. Neither the Company nor any of its Subsidiaries or affiliates is subject to the Bank Holding Company Act of 1956, as amended (the "BHCA") and to regulation by the Board of Governors of the Federal Reserve System (the "Federal Reserve"). Neither the Company nor any of its Subsidiaries or affiliates owns or controls, directly or indirectly, five percent (5%) or more of the outstanding shares of any class of voting securities or twenty-five percent or more of the total equity of a bank or any entity that is subject to the BHCA and to regulation by the Federal Reserve. Neither the Company nor any of its Subsidiaries or affiliates exercises a controlling influence over the management or policies of a bank or any entity that is subject to the BHCA and to regulation by the Federal Reserve.

(xlii) Money Laundering. The operations of the Company and its Subsidiaries are and have been conducted at all times in compliance with applicable financial record-keeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, Proceeds of Crime (Money Laundering) and Terrorist Financing Act (Canada), as amended, and the anti-money laundering laws of all applicable jurisdictions, and the applicable money laundering statutes and applicable rules and regulations thereunder (collectively, the "Money Laundering Laws"), and no Action or Proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any Subsidiary with respect to the Money Laundering Laws is pending or, to the knowledge of the Company or any Subsidiary, threatened.

(xliii) Options. Each share option granted by the Company under the Company's equity plan was granted in accordance with the terms of the Company's equity plan. No share option granted under the Company's equity plan has been backdated. The Company has not knowingly granted, and there is no and has been no Company policy or practice to knowingly grant, share options prior to, or otherwise knowingly coordinate the grant of share options with, the release or other public announcement of material information regarding the Company or its Subsidiaries or their financial results or prospects.

(xliv) Statistical Information. The statistical and market and industry-related data included in the Registration Statement, Pricing Disclosure Package and the Prospectus are based on or derived from sources which the Company believes to be reliable and accurate or represent the Company's good faith estimates that are made on the basis of data derived from such sources, and the Company has obtained the written consent to the use of such data from sources to the extent required.

(xlv) Forward-Looking Statements. Each financial or operational projection or other "forward-looking statement" (as defined by Section 27A of the Securities Act or Section 21E of the Exchange Act, or as defined by any other applicable securities laws) contained in the Registration Statement, the Pricing Disclosure Package or the Prospectus (i) was so included by the Company in good faith and with reasonable basis after due consideration by the Company of the underlying assumptions, estimates and other applicable facts and circumstances and (ii) is accompanied by meaningful cautionary statements identifying those factors that could cause actual results to differ materially from those in such forward-looking statement. No such statement was made with the knowledge of an executive officer or director of the Company that it was false or misleading.

(xlvi) Margin Rules. Neither the issuance, sale and delivery of the Securities nor the application of the proceeds thereof by the Company as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus will violate Regulation T, U or X of the Board of Governors of the Federal Reserve System or any other regulation of such Board of Governors.

(xlvii) FINRA Matters. All of the information provided to the Underwriters or to counsel for the Underwriters by the Company, its counsel, its officers and directors and the holders of any securities (debt or equity) or options to acquire any securities of the Company in connection with the offering of the Securities is true, complete, correct and compliant with FINRA's rules and any letters, filings or other supplemental information provided to FINRA pursuant to FINRA Rules is true, complete and correct. Except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, there are no claims, payments, arrangements, agreements or understandings relating to the payment of a finder's, consulting or origination fee by the Company or any person or entity on behalf of the Company with respect to the sale of the Securities hereunder or any other arrangements, agreements or understandings of the Company or, to the Company's knowledge, any of its shareholders that may affect the Underwriters' compensation, as determined by FINRA. Except as described in the Registration Statement, the Pricing Disclosure Package, or the Prospectus or disclosed to the Representative, the Company has not made any direct or indirect payments (in cash, securities or otherwise) to: (i) any person, as a finder's fee, consulting fee or otherwise, in consideration of such person raising capital for the Company or introducing to the Company persons who raised or provided capital to the Company; (ii) any FINRA member; or (iii) any person or entity that has any direct or indirect affiliation or association with any FINRA member, within the twelve (12) months prior to the date of this Agreement, other than the payment to the Underwriters as provided in this Agreement. None of the net proceeds from the sale of the Securities will be paid by the Company to any participating FINRA member or its affiliates, except as specifically authorized herein or disclosed in the Registration Statement, the Pricing Disclosure Package and the Prospectus. Except as disclosed in the Registration Statement, the Pricing Disclosure Package and the Prospectus, there is no (i) officer or director of the Company, or, to the Company's knowledge, (ii) beneficial owner of 5% or more of any class of the Company's securities or (iii) beneficial owner of the Company's unregistered equity securities that were acquired during the 180-day period immediately preceding the filing of the Registration Statement that is an affiliate or associated person of a FINRA member participating in the offering of the Securities (as determined in accordance with the rules and regulations of FINRA).

(xlviii) Integration. Neither the Company, nor any of its affiliates, nor any person acting on its or their behalf has, directly or indirectly, made any offers or sales of any security or solicited any offers to buy any security, under circumstances that would cause the offering of the Securities to be integrated with prior offerings by the Company for purposes of the Securities Act that would require the registration of any such securities under the Securities Act.

(xlix) Emerging Growth Company Status. The Company is an "emerging growth company," as defined in Section 2(a) of the Securities Act.

(l) Foreign Private Issuer. The Company is a "foreign private issuer" within the meaning of Rule 405 under the Securities Act.

(b) Any certificate signed by any officer of the Company delivered to the Representative or to counsel for the Representative shall be deemed a representation and warranty by the Company to the Underwriters as to the matters covered thereby.

2. (a) Subject to the terms and conditions herein set forth, (a) the Company agrees to sell to the several Underwriters, at a purchase price of $_____ per Common Share Unit, or 93% of the public offering price per Common Share Unit (the "Per Common Share Unit Purchase Price"), and of $_____ per Pre-Funded Warrant Unit, or 93% of the public offering price per Pre-Funded Warrant Unit (the "Per Pre-Funded Unit Purchase Price"), the Firm Securities, and (b) in the event and to the extent that the Underwriters shall exercise the election to purchase Option Shares and/or Option Warrants as provided below, the Company agrees to sell to the several Underwriters the Option Shares at a price per Option Share equal to $_____, or 93% of the difference of the public offering price per Share and Firm Warrant less $0.001 (the "Option Share Purchase Price"), and/or Option Warrants at a price per Option Warrant equal to $[__], or 93% of $0.001 (the "Option Warrant Purchase Price").

The Company hereby grants to the Underwriters the right to purchase at its election up to _____ Option Shares and/or up to _____ Option Warrants. The Underwriters may exercise their option to acquire Option Shares and/or Option Warrants in whole or in part from time to time only by written notice from the Representative to the Company, given within a period of 45 calendar days after the date of this Agreement and setting forth the number of Option Shares and/or Option Warrants to be purchased and the date on which such Option Shares and/or Option Warrants are to be delivered, as determined by the Representative but in no event earlier than the Closing Date or, unless the Representative and the Company otherwise agree in writing, earlier than two or later than ten business days after the date of such notice.

(b) The Company hereby agrees to issue to the Representative (and/or its designees) on the Closing Date a warrant (the "Representative's Warrant") for the purchase of an aggregate of [ ] Shares, representing 5% of the sum of (i) Firm Shares and (ii) Shares underlying the Pre-Funded Warrants sold in this offering, if any, but excluding Shares underlying the Warrants issued in this offering and the Option Securities, if any. The Representative's Warrant agreement, in the form attached hereto as Exhibit C (the "Representative's Warrant Agreement "), shall be exercisable, in whole or in part, commencing on a date which is six (6) months after the Effective Date and expiring on the five-year anniversary of the Effective Date at an initial exercise price per Share of $[ ], which is equal to [ ]% of the public offering price Share and Firm Warrant sold in this offering. The Representative's Warrant Agreement and the Shares issuable upon exercise thereof (the " Representative's Warrant Shares ") are hereinafter referred to together as the "Representative's Securities.") The Representative understands and agrees that there are significant restrictions pursuant to FINRA Rule 5110 against transferring the Representative's Warrant Agreement and the underlying Shares during the one hundred eighty (180) days after the Effective Date and by its acceptance thereof shall agree that it will not sell, transfer, assign, pledge or hypothecate the Representative's Warrant Agreement, or any portion thereof, or be the subject of any hedging, short sale, derivative, put or call transaction that would result in the effective economic disposition of such securities for a period of one hundred eighty (180) days following the Effective Date to anyone other than (i) an Underwriter or a selected dealer in connection with the Offering, or (ii) a bona fide officer or partner of the Representative or of any such Underwriter or selected dealer; and only if any such transferee agrees to the foregoing lock-up restrictions. Delivery of the Representative's Warrant Agreement shall be made on the Closing Date and shall be issued in the name or names and in such authorized denominations as the Representative may request at least one (1) full Business Day prior to the Closing Date.

3. (a) It is understood that the Underwriters propose to offer the Firm Securities for sale to the public upon the terms and conditions set forth in the Prospectus.

4. The Company will deliver the Shares, Pre-Funded Warrants and Warrants to the Underwriters through the facilities of the Depository Trust Company ("DTC") for the accounts of the Underwriters, against payment of the purchase price therefor by the Underwriters in Federal (same day) funds by official bank check or checks or wire transfer drawn to the order of the Company, at the office of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., 666 Third Avenue, New York, NY 10017, at 10:00 A.M., New York time, [__], 2021, or at such other time not later than seven full business days thereafter as the Representative and the Company determine, such time being herein referred to as the "Closing Date". For purposes of Rule 15c6-1 under the Exchange Act, the Closing Date (if later than the otherwise applicable settlement date) shall be the settlement date for payment of funds and delivery of the Securities. In the event that a purchaser delivers a Notice of Exercise (as defined in the Pre-Funded Warrants) to exercise any Pre-Funded Warrants on or prior to 12:00 P.M, New York time on the Trading Day (as defined in the Pre-Funded Warrants) immediately prior to the Closing Date, which may be delivered at any time after the time of execution of the Underwriting Agreement, the Company shall deliver Warrant Shares with respect to such Pre-Funded Warrants to such purchaser subject to such notice(s) (New York time) on the Closing Date. The Shares and/or Pre-Funded Warrants and the Firm Warrants will be issued separately and may be transferred separately immediately upon issuance.

Each time for the delivery of and payment for the Option Shares and Option Warrants, being herein referred to as an "Option Closing Date", which may be the Closing Date, shall be determined by the Representative as provided above. The Company will deliver the Option Shares and/or the Option Warrants being purchased on each Option Closing Date to the Underwriters through the facilities of the DTC for the accounts of the several Underwriters, against payment of the respective purchase price therefor by the Underwriters in Federal (same day) funds by official bank check or checks or wire transfer drawn to the order of the Company, at the above office of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., 666 Third Avenue, New York, NY 10017, at 10:00 A.M., New York time on the applicable Option Closing Date. The Option Shares and the Option Warrants, if any, will be issued separately and may be transferred separately immediately upon issuance.

5. The Company covenants and agrees with the Representative as follows:

(a) The Company, subject to Section 5(b), will comply with the requirements of Rule 430A under the Securities Act, and will notify the Underwriters promptly (and in any event with 24 hours), and confirm the notice in writing, (i) when any post-effective amendment to the Registration Statement shall become effective, or any supplement to the Prospectus or any amended prospectus shall have been filed, to furnish the Underwriters with copies thereof, and to file promptly all material required to be filed by the Company with the Commission pursuant to Rule 433(d) under the Securities Act, (ii) of the receipt of any comments from the Commission, (iii) of any request by the Commission for any amendment to the Registration Statement or any amendment or supplement to the Prospectus or for additional information, and (iv) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or of any order preventing or suspending the use of any Preliminary Prospectus, or of the suspension of the qualification of the Securities for offering or sale in any jurisdiction, or of the initiation or, to the Company's knowledge, the threatening of any proceedings for any of such purposes. The Company will promptly effect the filings necessary pursuant to Rule 424(b) under the Securities Act and will take such steps as it deems necessary to ascertain promptly whether the form of prospectus transmitted for filing under Rule 424(b) was received for filing by the Commission and, in the event that it was not, it will promptly file such prospectus. The Company will make every reasonable effort to prevent the issuance of any stop order and, if any stop order is issued, to obtain the lifting thereof as promptly as possible.

(b) The Company will give the Underwriters notice of its intention to file or prepare any amendment to the Registration Statement (including any filing under Rule 462(b) under the Securities Act), or any amendment, supplement or revision to the Prospectus, or any Issuer Free Writing Prospectus, will furnish the Underwriters with copies of any such documents a reasonable amount of time prior to such proposed filing or use, as the case may be, and will not file or use any such document to which the Underwriters or counsel for the Underwriters shall reasonably object.

(c) The Company will use its reasonable best efforts to qualify the Securities for offering and sale under the securities laws of such jurisdictions as the Underwriters may reasonably request and to comply with such laws in all material respects so as to permit the continuance of sales and dealings therein in such jurisdictions for as long as may be necessary to complete the distribution of the Securities, provided that nothing in this Section 5(c) shall require the Company to qualify as a foreign corporation in any jurisdiction in which it is not already so qualified, to file a general consent to service of process in any jurisdiction, or subject itself to taxation in any jurisdiction if it is not otherwise so subject.

(d) Upon the Representative's written request, the Company will deliver to the Representatives, without charge, a signed copy of the Initial Registration Statement as originally filed, any Rule 462(b) Registration Statement and of each amendment to each (including exhibits filed therewith or incorporated by reference therein) and a signed copy of all consents and certificates of experts, and will also, upon the Representative's written request, deliver to the Underwriters, without charge, a conformed copy of the Registration Statement as originally filed and of each amendment thereto (without exhibits). The copies of the Registration Statement and each amendment thereto furnished to the Underwriters will be identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T.

(e) The Company has delivered to each Underwriter, without charge, as many written and electronic copies of each Preliminary Prospectus as such Underwriter reasonably requested, and the Company hereby consents to the use of such copies for purposes permitted by the Securities Act. The Company will furnish to each Underwriter, without charge, prior to 5:00 P.M. New York time on the business day next succeeding the date of this Agreement and from time to time thereafter during the period when the Prospectus is required to be delivered in connection with sales of the Securities under the Securities Act or the Exchange Act or in lieu thereof, the notice referred to in Rule 173(a) under the Securities Act, such number of written and electronic copies of the Prospectus (as amended or supplemented) as such Underwriter may reasonably request. The Prospectus and any amendments or supplements thereto furnished to the Underwriters will be identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T.

(f) The Company will comply with the Securities Act and the Rules and Regulations so as to permit the completion of the distribution of the Securities as contemplated in this Agreement and in the Prospectus. If at any time when, in the reasonable opinion of counsel for the Representative, a prospectus is required to be delivered in connection with sales of the Securities under the Securities Act or the Exchange Act (or in lieu thereof, the notice referred to in Rule 173(a) under the Securities Act), any event shall occur or condition shall exist as a result of which it is necessary, in the reasonable opinion of counsel for the Representative or for the Company, to amend the Registration Statement or amend or supplement the Prospectus in order that the Prospectus will not include any untrue statements of a material fact or omit to state a material fact necessary in order to make the statements therein not misleading in the light of the circumstances existing at the time it (or in lieu thereof, the notice referred to in Rule 173(a) under the Securities Act) is delivered to a purchaser, or if it shall be necessary, in the reasonable opinion of either such counsel, at any such time to amend the Registration Statement or amend or supplement the Prospectus in order to comply with the requirements of the Securities Act or the Rules and Regulations, the Company will promptly prepare and file with the Commission, subject to Section 5(b), such amendment or supplement as may be necessary to correct such statement or omission or to make the Registration Statement or the Prospectus comply with such requirements, and the Company will furnish to the Underwriters such number of written and electronic copies of such amendment or supplement as each Underwriter may reasonably request. The Company will provide the Representative with notice of the occurrence of any event during the period specified above that may give rise to the need to amend or supplement the Registration Statement or the Prospectus as provided in the preceding sentence promptly after the occurrence of such event.

(g) The Company will make generally available (within the meaning of Section 11(a) of the Securities Act) to its security holders and to the Representative as soon as practicable, but not later than 45 days after the end of its fiscal quarter in which the first anniversary date of the effective date of the Registration Statement occurs, an earnings statement (which need not be audited) (in form complying with the provisions of Rule 158 under the Securities Act) covering a period of at least twelve consecutive months beginning after the effective date of the Registration Statement.

(h) The Company will use the net proceeds received by it from the sale of the Securities substantially in the manner specified in the Pricing Disclosure Package under the heading "Use of Proceeds".

(i) The Company will use its reasonable best efforts to maintain the listing or quotation of the Shares (including the Offered Shares and the Warrant Shares) on [the Nasdaq Capital Market/NYSE American].

(j) During a period of 90 days from the date of the Prospectus, the Company will not, without the prior written consent of the Representative, (i) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend or otherwise transfer or dispose of, directly or indirectly, or announce the issuance or proposed issuance of, any Shares or Share Equivalents or file or cause to be filed a registration statement in connection therewith or (ii) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of Shares, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of Shares or such other securities, in cash or otherwise, other than (1) the Securities to be sold hereunder; (2) the issuance of any Warrant Shares; (3) the issuance of up to [__] Shares pursuant to the terms of an option or warrant or the conversion of a convertible security outstanding on the date hereof; or (3) any securities of the Company under any equity plan of the Company to employees or consultants, provided however, that the recipients of such securities shall execute a lock-up agreement substantially in the form attached hereto as Exhibit D.

(k) The Company, during the period when the Prospectus is required to be delivered in connection with sales of the Securities under the Securities Act or the Exchange Act (or in lieu thereof, the notice referred to in Rule 173(a) under the Securities Act), will file all documents required to be filed with the Commission pursuant to the Exchange Act within the time periods required by the Exchange Act and the rules and regulations of the Commission thereunder.

(l) The Company will file with the Commission such information on Form 20-F, Form 6-K, Form 10-Q or Form 10-K, as may be required pursuant to Rule 463 under the Securities Act.

(m) During a period of two years from the effective date of the Registration Statement, the Company will furnish to you copies of all reports or other communications (financial or other) furnished to shareholders generally, and to deliver to you (i) as soon as they are available, copies of any reports and financial statements furnished to or filed with the Commission or any national securities exchange on which any class of securities of the Company is listed; provided that the Company will be deemed to have furnished such reports and financial statements to the extent they are filed on EDGAR.

(n) If the Company elects to rely upon Rule 462(b) under the Securities Act, the Company will file a Rule 462(b) Registration Statement with the Commission in compliance with Rule 462(b) by 10:00 P.M., Washington, D.C. time, on the date of this Agreement, and at the time of filing either to pay to the Commission the filing fee for the Rule 462(b) Registration Statement or to give irrevocable instructions for the payment of such fee pursuant to Rule 111(b) under the Securities Act.

(o) If so requested by the Representative, the Company shall cause to be prepared and delivered, at its expense, within one business day from the effective date of this Agreement, to the Underwriters an "electronic Prospectus" to be used by the Underwriters in connection with the offering and sale of the Securities. As used herein, the term "electronic Prospectus" means a form of the most recent Preliminary Prospectus, any Issuer Free Writing Prospectus or the Prospectus, and any amendment or supplement thereto, that meets each of the following conditions: (i) it shall be encoded in an electronic format, reasonably satisfactory to the Representative, that may be transmitted electronically by the Underwriters to offerees and purchasers of the Securities, (ii) it shall disclose the same information as such paper Preliminary Prospectus, Issuer Free Writing Prospectus or the Prospectus, as the case may be; and (iii) it shall be in or convertible into a paper format or an electronic format, reasonably satisfactory to the Representative, that will allow investors to store and have continuously ready access to such Preliminary Prospectus, Issuer Free Writing Prospectus or the Prospectus at any future time, without charge to investors (other than any fee charged for subscription to the Internet generally). The Company hereby confirms that, if so requested by the Representative, it has included or will include in the Prospectus filed with the Commission an undertaking that, upon receipt of a request by an investor or his or her representative, the Company shall transmit or cause to be transmitted promptly, without charge, a paper copy of such paper Preliminary Prospectus, Issuer Free Writing Prospectus or the Prospectus to such investor or representative.

(p) Provided that the Firm Securities are sold in accordance with the terms of this Agreement, the Representative shall have an irrevocable right of first refusal (the "Right of First Refusal"), for a period of nine (9) months after the Closing Date, to act as lead investment banker, lead book-runner and/or lead placement agent, at the Representative's sole and exclusive discretion, for each and every future public or private equity or debt offering, including all equity linked financings (each, a "Subject Transaction"), during such nine (9) month period, of the Company, or any successor to or subsidiary of the Company, on terms and conditions customary to the Representative for such Subject Transactions. For the avoidance of any doubt, the Company shall not retain, engage or solicit any additional investment banker, book-runner, financial advisor, underwriter and/or placement agent in a Subject Transaction without the express written consent of the Representative.

(q) The Company shall pay all Depositary fees (including, without limitation, any fees required for same-day processing of any instruction letter delivered by the Company and any exercise notice delivered by a holder of the Warrants or Pre-Funded Warrants), stamp taxes and other taxes and duties levied in connection with the delivery of any Securities under this Agreement or the Warrants or Pre-Funded Warrants and shall reimburse the Underwriters or any holder of the Warrants or Pre-Funded Warrants for any fees charged to such persons or entities by the Depositary in connection with the issuance or holding or sale of the Offered Shares and Warrant Shares.

6. (a) The Company represents and agrees that, without the prior consent of the Representative, it has not made and will not make any offer relating to the Securities that would constitute a "free writing prospectus" as defined in Rule 405 under the Securities Act; the Representative represents and agrees that, without the prior consent of the Company, it has not made and will not make any offer relating to the Securities that would constitute a free writing prospectus; any such free writing prospectus the use of which has been consented to by the Company and the Representative is listed on Schedule II hereto;

(b) The Company has complied and will comply with the requirements of Rule 433 under the Securities Act applicable to any Issuer Free Writing Prospectus, including timely filing with the Commission or retention where required and legending; the Company represents that it has satisfied and agrees that it will satisfy the conditions under Rule 433 under the Securities Act to avoid a requirement to file with the Commission any electronic road show;

(c) The Company agrees that if at any time following issuance of an Issuer Free Writing Prospectus any event occurred or occurs as a result of which such Issuer Free Writing Prospectus would conflict with the information in the Registration Statement, the Pricing Prospectus or the Prospectus or, when considered together with the information in the Pricing Prospectus and other Issuer Free Writing Prospectuses, would include an untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in light of the circumstances then prevailing, not misleading, the Company will give prompt notice thereof to the Representative and, if requested by the Representative, will prepare and furnish without charge to the Representative an Issuer Free Writing Prospectus or other document which will correct such conflict, statement or omission.

7. The Company covenants and agrees with the Representative that on the Closing Date the Company will pay or cause to be paid the accountable expenses incurred by the Representative in the amount of up to $80,000 in the aggregate, including, but not limited to, fees and expenses of legal counsel. Furthermore, the Company covenants and agrees with the Representative that on the Closing Date the Company will pay or cause to be paid non-accountable expenses to the Representative, including, but not limited to, IPREO software related expenses, background check expenses, tombstones and marketing related expenses including roadshow expenses, provided that such non-accountable expenses shall not exceed 1.0% of the gross proceeds received by the issuer from the sale of the Firm Securities; provided further, however, that such reimbursement amount shall in no way shall limit the indemnification and contribution provisions of this Agreement.

8. The obligations of the several Underwriters hereunder to purchase the Shares, Warrants and Pre-Funded Warrants on the Closing Date, and the Option Shares and/or Warrants on each Option Closing Date, as the case may be, is subject to the performance by the Company of its obligations hereunder and to the following additional conditions:

(a) The Prospectus shall have been filed with the Commission pursuant to Rule 424(b) under the Securities Act within the applicable time period prescribed for such filing by the Rules and Regulations and in accordance with Section 5(a); all material required to be filed by the Company pursuant to Rule 433(d) under the Securities Act shall have been filed with the Commission within the applicable time period prescribed for such filing by Rule 433 under the Securities Act; if the Company has elected to rely upon Rule 462(b) under the Securities Act, the Rule 462(b) Registration Statement shall have become effective by 10:00 P.M., Washington, D.C. time, on the date of this Agreement; no stop order suspending the effectiveness of the Registration Statement or any part thereof or the Prospectus or any part thereof or any Issuer Free Writing Prospectus shall have been issued and no proceeding for that purpose shall have been initiated or, to the knowledge of the Company, threatened by the Commission or any state securities commission; and all requests for additional information on the part of the Commission shall have been complied with to the reasonable satisfaction of the staff of the Commission.

(b) The representations and warranties of the Company contained herein and in the Pre-Funded Warrants and the Warrants, as applicable, are true and correct on and as of the Closing Date or the Option Closing Date, as the case may be, as if made on and as of the Closing Date or the Option Closing Date, as the case may be, and the Company shall have complied with all agreements and all conditions on its part to be performed or satisfied hereunder at or prior to the Closing Date or the Option Closing Date, as the case may be.

(c) Subsequent to the execution and delivery of this Agreement and prior to the Closing Date or the Option Closing Date, as the case may be, there shall not have occurred any downgrading, nor shall any notice have been given of (i) any downgrading, (ii) any intended or potential downgrading or (iii) any review or possible change that does not indicate an improvement, in the rating accorded any securities of or guaranteed by the Company or any Subsidiary by any "nationally recognized statistical rating organization", as such term is defined for purposes of Rule 436(g)(2) under the Securities Act.

(d) (i) Neither the Company nor any Subsidiary shall have sustained since the date of the latest audited financial statements included in the Pricing Prospectus any material loss or interference with its business from fire, explosion, flood or other calamity, whether or not covered by insurance, or from any labor dispute or court or governmental action, order or decree, otherwise than as set forth or contemplated in the Pricing Prospectus and except as described in the Registration Statement and the Pricing Disclosure Package, and (ii) since the respective dates as of which information is given in the Registration Statement and the Prospectus, (1) there shall not have been any change in the share capital or long-term debt of the Company or any Subsidiary (other than the issuance of Shares upon exercise of options described as outstanding in, and the grant of options and restricted share units under existing equity incentive plans described in, the most recent Preliminary Prospectus) or (2) there shall not have been any Material Adverse Effect, or any development involving a prospective Material Adverse Effect, in or affecting the business, prospects, management, financial position, shareholders' equity or results of operations of the Company and the Subsidiaries, considered as one enterprise, the effect of which, in any such case described in clause (i) or (ii), is in the judgment of the Representative so material and adverse as to make it impracticable or inadvisable to proceed with the public offering or the delivery of the Securities being delivered at such Closing Date or Option Closing Date, as the case may be, on the terms and in the manner contemplated in the Pricing Prospectus.

(e) The Representative shall have received on and as of the Closing Date or the Option Closing Date, as the case may be, a certificate of an executive officer of the Company, reasonably satisfactory to the Representative, to the effect (1) set forth in Sections 8(b) (with respect to the respective representations, warranties, agreements and conditions of the Company) and 8(c), (2) that none of the situations set forth in clause (i) or (ii) of Section 8(d) shall have occurred and (3) that no stop order suspending the effectiveness of the Registration Statement has been issued and to the knowledge of the Company, no proceedings for that purpose have been instituted or are pending or contemplated by the Commission;

(f) On the Closing Date or Option Closing Date, as the case may be, each of McCarthy Tetrault LLP, Canadian counsel to the Company ("Canadian Company Counsel"), and Dorsey & Whitney LLP, U.S. securities counsel for the Company, shall have furnished to the Representative their respective written opinions, each dated the Closing Date or the Option Closing Date, as the case may be, in form and substance reasonably satisfactory to counsel for the Representative.

(g) On the Closing Date or Option Closing Date, as the case may be, [IP Counsel] to the Company ("IP Counsel") shall have furnished to the Representative its written opinion, dated the Closing Date or the Option Closing Date, as the case may be, in form and substance reasonably satisfactory to counsel for the Representative.

(h) On the effective date of the Registration Statement and, if applicable, the effective date of the most recently filed post-effective amendment to the Registration Statement, Smythe LLP, shall have furnished to the Representative a letter, dated the date of delivery thereof, in form and substance satisfactory to the Representative, containing statements and information of the type customarily included in accountants' "comfort letters" to underwriters with respect to the financial statements and certain financial information contained in the Registration Statement, the Pricing Prospectus and the Prospectus.

(i) On the Closing Date or Option Closing Date, as the case may be, the Representative shall have received from Smythe LLP, a letter, dated the Closing Date or such Option Closing Date, as the case may be, to the effect that they reaffirm the statements made in the letter or letters furnished pursuant to Section 8(h), except that the specified date referred to shall be a date not more than three business days prior to the Closing Date or such Option Closing Date, as the case may be.

(j) FINRA shall have confirmed that it has not raised any objection with respect to the fairness and reasonableness of the underwriting terms and conditions.

(k) The Representative shall have received "lock-up" agreements, each substantially in the form ofExhibit D hereto, from person identified on Schedule III hereto, and such agreements shall be in full force and effect on the Closing Date or Option Closing Date, as the case may be.

(l) On or prior to the Closing Date or Option Closing Date, as the case may be, the Company shall have furnished to the Underwriters such further information, certificates and documents as the Representative shall reasonably request.

(m) On or after the Applicable Time there shall not have occurred any of the following: (i) a suspension or material limitation in trading in securities generally on [the Nasdaq Capital Market/NYSE American]; (ii) a suspension or material limitation in trading in the Company's securities on [the Nasdaq Capital Market/NYSE American]; (iii) a general moratorium on commercial banking activities declared by any of Federal or New York State authorities or a material disruption in commercial banking or securities settlement or clearance services in the U.S.; (iv) the outbreak or escalation of hostilities involving the U.S. or the declaration by the U.S. of a national emergency or war or (v) the occurrence of any other calamity or crisis or any change in financial, political or economic conditions in the U.S. or elsewhere, if the effect of any such event specified in clause (iv) or (v) in the sole judgment of the Representative makes it impracticable or inadvisable to proceed with the public offering or the delivery of the Securities being delivered at such Closing Date or Option Closing Date, as the case may be, on the terms and in the manner contemplated in the Prospectus.

If any condition specified in this Section 8 shall not have been fulfilled when and as required to be fulfilled, this Agreement may be terminated, subject to the provisions of Section 12, by the Representative by notice to the Company at any time at or prior to the Closing Date or Option Closing Date, as the case may be, and such termination shall be without liability of any party to any other party, except as provided in Section 12.

9. Indemnification.

(a) Indemnification of the Underwriters.

(i) General. Subject to the conditions set forth below, the Company agrees to indemnify and hold harmless each Underwriter, its affiliates and each of its and their respective directors, officers, members, employees, representatives, partners, shareholders, affiliates, counsel, and agents and each person, if any, who controls any such Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act (collectively the "Underwriter Indemnified Parties," and each an "Underwriter Indemnified Party"), against any and all loss, liability, claim, damage and expense whatsoever (including but not limited to any and all reasonable legal or other expenses reasonably incurred in investigating, preparing or defending against any litigation, commenced or threatened, or any claim whatsoever, whether arising out of any action between any of the Underwriter Indemnified Parties and the Company or between any of the Underwriter Indemnified Parties and any third party, or otherwise) to which they or any of them may become subject under the Securities Act, the Exchange Act or any other statute or at common law or otherwise or under the laws of foreign countries (an "Underwriter Claim"), (i) arising out of or based upon any untrue statement or alleged untrue statement of a material fact contained in (A) the Registration Statement, the Pricing Disclosure Package, any Preliminary Prospectus, the Prospectus, or in any Issuer Free Writing Prospectus (as from time to time each may be amended and supplemented); (B) any materials or information provided to investors by, or with the approval of, the Company in connection with the marketing of the offering of the Securities including any "road show" or investor presentations made to investors by the Company (whether in person or electronically); or (C) any application or other document or written communication (in this Section 9, collectively called "application") executed by the Company or based upon written information furnished by the Company in any jurisdiction in order to qualify the Securities under the securities laws thereof or filed with the Commission, any state securities commission or agency, [the Nasdaq Capital Market/NYSE American] or any other national securities exchange; or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, unless such statement or omission was made in reliance upon, and in conformity with, the Underwriters' Information or (ii) otherwise arising in connection with or allegedly in connection with the offering and sale of the Offered Shares, Pre-Funded Warrants and Warrants, unless arising in connection with reliance upon, and in conformity with, the Underwriters' Information. The Company also agrees that it will reimburse each Underwriter Indemnified Party for all reasonable fees and expenses (including but not limited to any and all reasonable legal or other expenses reasonably incurred in investigating, preparing or defending against any litigation, commenced or threatened, or any claim whatsoever, whether arising out of any action between any of the Underwriter Indemnified Parties and the Company or between any of the Underwriter Indemnified Parties and any third party, or otherwise) (collectively, the "Underwriter Expenses"), and further agrees wherever and whenever possible to advance payment of Underwriter Expenses as they are incurred by an Underwriter Indemnified Party in investigating, preparing, pursuing or defending any Underwriter Claim. "Underwriters' Information" shall mean written information furnished to the Company with respect to the Underwriters by the Representative expressly for use in the Registration Statement, the Pricing Disclosure Package, any Preliminary Prospectus, the Prospectus, or in any Issuer Free Writing Prospectus. The parties acknowledge and agree that such information provided by or on behalf of any Underwriter consists solely of the disclosure contained in the subsections ["Discounts, Commissions and Expense Reimbursements," "Over-allotment Option to Purchase Additional Securities," "Electronic Offer, Sale and Distribution of Securities, "Passive Market Making," "Certain Relationships" and "Stabilization"] included in the "Underwriting" section of the Prospectus.

(ii) Procedure. If any action is brought against an indemnified party in respect of which indemnity may be sought against an indemnifying party pursuant to Section 9(a)(i) or 9(b), such indemnified party shall promptly notify the indemnifying party in writing of the institution of such action and the indemnifying party shall assume the defense of such action, including the employment and fees of counsel (subject to the approval of such indemnified party) and payment of actual expenses. Such indemnified party shall have the right to employ its or their own counsel in any such case, but the fees and expenses of such counsel shall be at the expense of the indemnified party unless (A) the employment of counsel by the indemnified party has been authorized in writing by the indemnifying party, (B) the indemnified party has reasonably concluded (based on advice of counsel) that there may be legal defenses available to it or other indemnified parties that are different from or in addition to those available to the indemnifying party, (C) a conflict or potential conflict exists (based on advice of counsel to the indemnified party) between the indemnified party and the indemnifying party (in which case the indemnifying party will not have the right to direct the defense of such action on behalf of the indemnified party), (D) the indemnifying party has not in fact employed counsel to assume the defense of such action or counsel satisfactory to the indemnified party, in each case, within a reasonable time after receiving notice of the commencement of the action; in each of which cases the reasonable fees, disbursements and other charges of counsel will be at the expense of the indemnifying party or parties. It is understood that the indemnifying party or parties shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the reasonable fees, disbursements and other charges of more than one separate firm admitted to practice in such jurisdiction (plus local counsel) at any one time for all such indemnified party or parties. All such fees, disbursements and other charges will be reimbursed by the indemnifying party promptly as they are incurred. An indemnifying party will not, in any event, be liable for any settlement of any action or claim effected without its written consent. In addition, the indemnifying party shall not, without the prior written consent of the indemnified party, settle, compromise or consent to the entry of any judgment in or otherwise seek to terminate any pending or threatened action in respect of which advancement, reimbursement, indemnification or contribution may be sought hereunder unless such settlement, compromise, consent or termination (i) includes an unconditional release of each indemnified party, acceptable to such indemnified party, from all liabilities, expenses and claims arising out of such action for which indemnification or contribution may be sought and (ii) does not include a statement as to or an admission of fault, culpability or a failure to act, by or on behalf of any indemnified party.

(b) Indemnification of the Company. Each Underwriter, severally and not jointly, agrees to indemnify and hold harmless the Company, its affiliates and each of its and their respective directors, officers, members, employees, representatives, partners, shareholders, affiliates, counsel, and agents and each person, if any, who control such persons within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act against any and all loss, liability, claim, damage and expense whatsoever (including but not limited to any and all reasonable legal or other expenses reasonably incurred in investigating, preparing or defending against any litigation, commenced or threatened, or any claim but only with respect to untrue statements or omissions, or alleged untrue statements or omissions made in the Registration Statement, any Preliminary Prospectus, the Pricing Disclosure Package or Prospectus or any amendment or supplement thereto or in any application, in reliance upon, and in strict conformity with, the Underwriters' Information. In case any action shall be brought against the Company or any other person so indemnified based on any Preliminary Prospectus, the Registration Statement, the Pricing Disclosure Package or Prospectus or any amendment or supplement thereto or any application, and in respect of which indemnity may be sought against any Underwriter, such Underwriter shall have the rights and duties given to the Company, and the Company and each other person so indemnified shall have the rights and duties given to the several Underwriters by the provisions of Section 9(a)(ii). The Company agrees promptly to notify the Representative of the commencement of any litigation or proceedings against the Company or any of its officers, directors or any person, if any, who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, in connection with the issuance and sale of the Offered Shares, Pre-Funded Warrants and Warrants or in connection with the Registration Statement, the Pricing Disclosure Package, the Prospectus, or any Issuer Free Writing Prospectus.

(c) Contribution.

(i) Contribution Rights. If the indemnification provided for in this Section 9 shall for any reason be unavailable to or insufficient to hold harmless an indemnified party under Section 9(a) or 9(b) in respect of any loss, claim, damage or liability, or any action in respect thereof, referred to therein, then each indemnifying party shall, in lieu of indemnifying such indemnified party, contribute to the amount paid or payable by such indemnified party as a result of such loss, claim, damage or liability, or action in respect thereof, (i) in such proportion as shall be appropriate to reflect the relative benefits received by the Company, on the one hand, and the Underwriters, on the other, from the offering of the Securities, or (ii) if the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company, on the one hand, and the Underwriters, on the other, with respect to the statements or omissions that resulted in such loss, claim, damage or liability, or action in respect thereof, as well as any other relevant equitable considerations. The relative benefits received by the Company, on the one hand, and the Underwriters, on the other, with respect to such Offering shall be deemed to be in the same proportion as the total net proceeds from the Offering of the Securities purchased under this Agreement (before deducting expenses) received by the Company, as set forth in the table on the cover page of the Prospectus, on the one hand, and the total underwriting discounts and commissions received by the Underwriters in connection with the offering of the Securities, as set forth in the table on the cover page of the Prospectus, on the other hand. The relative fault shall be determined by reference to whether the untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company or the Underwriters, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and the Underwriters agree that it would not be just and equitable if contributions pursuant to this Section 9(c)(i) were to be determined by pro rata allocation (even if the Underwriters were treated as one entity for such purpose) or by any other method of allocation that does not take into account the equitable considerations referred to herein. The amount paid or payable by an indemnified party as a result of the loss, claim, damage or liability, or action in respect thereof, referred to above in this Section 9(c)(i) shall be deemed to include, for purposes of this Section 9(c)(i), any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim. Notwithstanding the provisions of this Section 9(c)(i) in no event shall an Underwriter be required to contribute any amount in excess of the amount by which the total underwriting discounts and commissions received by such Underwriter in connection with the offering of the Securities exceeds the amount of any damages that such Underwriter has otherwise been required to pay by reason of such untrue or alleged untrue statement or omission or alleged omission. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation.

(ii) Contribution Procedure. Within fifteen (15) days after receipt by any party to this Agreement (or its representative) of notice of the commencement of any action, suit or proceeding, such party will, if a claim for contribution in respect thereof is to be made against another party ("contributing party"), notify the contributing party of the commencement thereof, but the failure to so notify the contributing party will not relieve it from any liability which it may have to any other party other than for contribution hereunder. In case any such action, suit or proceeding is brought against any party, and such party notifies a contributing party or its representative of the commencement thereof within the aforesaid 15 days, the contributing party will be entitled to participate therein with the notifying party and any other contributing party similarly notified. Any such contributing party shall not be liable to any party seeking contribution on account of any settlement of any claim, action or proceeding affected by such party seeking contribution on account of any settlement of any claim, action or proceeding affected by such party seeking contribution without the written consent of such contributing party. The contribution provisions contained in this Section 9(c)(ii) are intended to supersede, to the extent permitted by law, any right to contribution under the Securities Act, the Exchange Act or otherwise available. Each Underwriter's obligations to contribute pursuant to this Section 9(c) are several and not joint.

10. Default by an Underwriter.

(a) Default Not Exceeding 10% of Firm Securities or Option Securities If any Underwriter or Underwriters shall default in its or their obligations to purchase the Firm Securities or the Option Securities, if the Option is exercised hereunder, and if the number of the Firm Securities or Option Securities with respect to which such default relates does not exceed in the aggregate 10% of the number of Firm Securities or Option Securities that all Underwriters have agreed to purchase hereunder, then such Firm Securities or Option Securities to which the default relates shall be purchased by the non-defaulting Underwriters in proportion to their respective commitments hereunder.

(b) Default Exceeding 10% of Firm Securities or Option Securities In the event that the default addressed in Section 10(a) relates to more than 10% of the Firm Securities or Option Securities, the Representative may in its discretion arrange for itself or for another party or parties to purchase such Firm Securities or Option Securities to which such default relates on the terms contained herein. If, within one (1) Business Day after such default relating to more than 10% of the Firm Securities or Option Securities, the Representative does not arrange for the purchase of such Firm Securities or Option Securities, then the Company shall be entitled to a further period of one (1) Business Day within which to procure another party or parties satisfactory to the Representative to purchase said Firm Securities or Option Securities on such terms. In the event that neither the Representative nor the Company arranges for the purchase of the Firm Securities or Option Securities to which a default relates as provided in this Section 10, this Agreement will automatically be terminated by the Representative or the Company without liability on the part of the Company (except as provided in Sections 7 and 12 hereof) or the several Underwriters (except as provided in Section 9 hereof); provided, however, that if such default occurs with respect to the Option Securities, this Agreement will not terminate as to the Firm Securities; and provided, further, that nothing herein shall relieve a defaulting Underwriter of its liability, if any, to the other Underwriters and to the Company for damages occasioned by its default hereunder.

(c) Postponement of Closing Date. In the event that the Firm Securities or Option Securities to which the default relates are to be purchased by the non-defaulting Underwriters, or are to be purchased by another party or parties as aforesaid, the Representative or the Company shall have the right to postpone the Closing Date or Option Closing Date for a reasonable period, but not in any event exceeding five (5) Business Days, in order to effect whatever changes may thereby be made necessary in the Registration Statement, the Pricing Disclosure Package or the Prospectus or in any other documents and arrangements, and the Company agrees to file promptly any amendment to the Registration Statement, the Pricing Disclosure Package or the Prospectus that in the opinion of counsel for the Underwriter may thereby be made necessary. The term "Underwriter" as used in this Agreement shall include any party substituted under this Section 10 with like effect as if it had originally been a party to this Agreement with respect to such Securities.

11. Notwithstanding anything herein contained, this Agreement (or the obligations of the Underwriters with respect to any Option Shares and Option Warrants which have yet to be purchased) may be terminated, subject to the provisions of Section 12, in the absolute discretion of the Representative, by notice given to the Company, if after the execution and delivery of this Agreement and prior to the Closing Date or the Option Closing Date, as the case may be, (a) trading generally on the NYSE American or the New York Stock Exchange or on the Nasdaq Global Select Market, the Nasdaq Global Market or the Nasdaq Capital Market shall have been suspended or materially limited, or minimum or maximum prices for trading have been fixed, or maximum ranges for prices have been required, by any of said exchanges or by such system or by order of the Commission, FINRA or any other governmental or regulatory authority, (b) trading of any securities of or guaranteed by the Company or any Subsidiary shall have been suspended on any exchange or in any over-the-counter market, (c) a general moratorium on commercial banking activities in New York shall have been declared by Federal or New York State authorities or a new restriction materially adversely affecting the distribution of the Firm Securities or the Option Securities, as the case may be, shall have become effective, or (d) there has occurred any material adverse change in the financial markets in the U.S. or the international financial markets, any outbreak of hostilities or escalation thereof or other calamity or crisis or any change or development involving a prospective change in national or international political, financial or economic conditions, in each case the effect of which is such as to make it, in the judgment of the Representative, impracticable to market the Securities to be delivered on the Closing Date or Option Closing Date, as the case may be, or to enforce contracts for the sale of the Securities.

If this Agreement is terminated pursuant to this Section 11, such termination will be without liability of any party to any other party except as provided in Section 12 hereof.

12. Notwithstanding any contrary provision contained in this Agreement, any election hereunder or any termination of this Agreement, and whether or not this Agreement is otherwise carried out, the provisions of Section 9 shall remain in full force and effect and shall not be in any way affected by, such election or termination or failure to carry out the terms of this Agreement or any part hereof. All representations, warranties and agreements contained in this Agreement or in certificates of officers of the Company submitted pursuant hereto, shall remain operative and in full force and effect regardless of (i) any investigation made by or on behalf of any Underwriter or its affiliates or selling agents, any person controlling any Underwriter, its officers or directors or any person controlling the Company or (ii) delivery of and payment for the Offered Shares, Warrants and Pre-Funded Warrants. Notwithstanding anything to the contrary herein, in the event that an offering pursuant to this Agreement shall not be carried out for any reason whatsoever, the Company shall be obligated to pay to the Representative its actual and accountable out-of-pocket expenses related to the offering pursuant to this Agreement (including the fees and disbursements of Representative's legal counsel), provided such expenses shall not exceed $[__].

13. This Agreement shall inure solely to the benefit of and shall be binding upon the Representative, the Underwriters, the Company and the controlling persons, directors and officers referred to in Section 9 hereof, and their respective successors, legal representatives, heirs and assigns, and no other person shall have or be construed to have any legal or equitable right, remedy or claim under or in respect of or by virtue of this Agreement or any provisions herein contained. The term "successors and assigns" shall not include a purchaser, in its capacity as such, of securities from any of the Underwriters.

14. All communications hereunder, except as herein otherwise specifically provided, shall be in writing and shall be mailed (registered or certified mail, return receipt requested), personally delivered or sent by facsimile transmission and confirmed and shall be deemed given when so delivered or faxed and confirmed or if mailed, two (2) days after such mailing.

If to the Representative:

A.G.P./Alliance Global Partners
590 Madison Avenue
New York, NY 10022
Attn: Mr. David Bocchi, Head of Investment Banking

with copies (which shall not constitute notice) to:

Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C
666 Third Avenue
New York, NY 10017
Attention: Ivan Blumenthal, Esq.

and

TingleMerrett LLP
639 5 Ave SW #1250
Calgary, AB T2P 0M9 Canada
Attention: Scott Reeves, Esq.

If to the Company:

Xortx Therapeutics, Inc.
Suite 4000, 421 – 7th Avenue SW
Calgary, Alberta T2P 4K9
Canada
Attention: Chief Executive Officer

with copies (which shall not constitute notice) to:

Dorsey & Whitney LLP
51 West 52nd Street
New York, NY 10019
Attention: Anthony J. Marsico, Esq.

and

McCarthy Tétrault LLP
421 7th Avenue SW, Suite 4000
Calgary AB T2P 4K9
Canada
Attention: Rick Pawluk, Esq.

15. This Agreement may be signed in counterparts, each of which shall be an original and all of which together shall constitute one and the same instrument.

16. This Agreement shall be governed by and construed and enforced in accordance with the laws of the State of New York, without giving effect to conflict of laws principles thereof. The Company hereby agrees that any action, proceeding or claim against it or, to the extent permitted by applicable law, its affiliates, directors, officers, shareholders, partners, members, employees or agents arising out of, or relating in any way to this Agreement shall be brought and enforced in the New York Supreme Court, County of New York, or in the United States District Court for the Southern District of New York, and irrevocably submits to such jurisdiction, which jurisdiction shall be exclusive. The Company hereby waives any objection to such exclusive jurisdiction and that such courts represent an inconvenient forum. Any such process or summons to be served upon the Company may be served by transmitting a copy thereof by registered or certified mail, return receipt requested, postage prepaid, addressed to it at the address set forth in Section 14 hereof. Such mailing shall be deemed personal service and shall be legal and binding upon the Company in any action, proceeding or claim. The Company agrees that the prevailing party(ies) in any such action shall be entitled to recover from the other party(ies) all of its reasonable attorneys' fees and expenses relating to such action or proceeding and/or incurred in connection with the preparation therefor. The Company (on its behalf and, to the extent permitted by applicable law, on behalf of its shareholders and affiliates) and each of the Underwriters hereby irrevocably waives, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Agreement or the transactions contemplated hereby.

17. The Company acknowledges and agrees that (i) the purchase and sale of the Securities pursuant to this Agreement, including the determination of the public offering price of the Securities and any related discounts and commissions, is an arm's-length commercial transaction between the Company on the one hand, and any of the several Underwriters, on the other, (ii) in connection therewith and with the process leading to such transaction each Underwriter is acting solely as a principal and not the agent or fiduciary of the Company or its shareholders, creditors, employees or any other party, (iii) no Underwriter has assumed an advisory or fiduciary responsibility in favor of the Company with respect to the offering contemplated hereby or the process leading thereto (irrespective of whether any Underwriter has advised or is currently advising the Company on other matters) or any other obligation to the Company except the obligations expressly set forth in this Agreement, and (iv) the Company has consulted its own legal and financial advisors to the extent it deemed appropriate. The Company agrees that it will not claim that any Underwriter has rendered advisory services of any nature or respect, or owes a fiduciary or similar duty to the Company, in connection with such transaction or the process leading thereto.

18. The Company acknowledges that each Underwriter's research analysts and research departments are required to be independent from its investment banking division and are subject to certain regulations and internal policies, and that such Underwriter's research analysts may hold views and make statements or investment recommendations and/or publish research reports with respect to the Company and/or the offering that differ from the views of their investment banking division. The Company acknowledges that each Underwriter is a full service securities firm and as such from time to time, subject to applicable securities laws, rules and regulations, may effect transactions for its own account or the account of its customers and hold long or short positions in debt or equity securities of the Company; *provided*, *however*, that nothing in this Section 18 shall relieve the Underwriter of any responsibility or liability it may otherwise bear in connection with activities in violation of applicable securities laws, rules or regulations.

19. This Agreement (together with the other agreements and documents being delivered pursuant to or in connection with this Agreement) constitutes the entire agreement of the parties hereto with respect to the subject matter hereof and thereof, and supersedes all prior agreements and understandings of the parties, oral and written, with respect to the subject matter hereof. Except as otherwise contemplated herein, it is understood and agreed by the parties hereto that all other binding terms and conditions of that certain engagement letter between the Company and A.G.P./Alliance Global Partners, dated March 30, 2021 (the "Engagement Letter"), shall remain valid and binding on, and enforceable against, the Company and in accordance with the terms thereof. In the event of any conflict between the terms of the Engagement Letter and the Agreement, the terms of the Agreement shall prevail.

[INTENTIONALLY BLANK]

If the foregoing correctly sets forth the understanding between the Underwriters and the Company, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement between us.

Very truly yours,

XORTX Therapeutics Inc.

By: _____
Name:
Title:

Confirmed as of the date first written above mentioned, on behalf of itself and as Representative of the several Underwriters named on Schedule 1 hereto:

A.G.P./ALLIANCE GLOBAL PARTNERS

By: _____
Name:
Title:

SCHEDULE I

	Number of Firm Units to be Purchased from the Company	Number of Pre-Funded Warrant Units to be Purchased from the Company	Maximum Number of Option Shares to be Purchased if the Option to Purchase additional Shares and Warrants is Fully Exercised	Maximum Number of Option Warrants to be Purchased if the Option to Purchase additional Shares and Warrants is Fully Exercised*
A.G.P./Alliance Global Partners				
Total				

* Each Firm Warrant and Option Warrant is exercisable into _____ Shares.
Public Offering Price per Option Share: $
Public Offering Price per Option Warrant: $
Pre-Funded Warrant Exercise Price: $
Warrant Exercise Price: $
Underwriting Discount per Option Share: $
Underwriting Discount per Option Warrant: $
Proceeds to Company per Option Share: $
Proceeds to Company per Option Warrant: $

The terms of the Warrants set forth on Exhibit A and the Pre-Funded Warrants set forth on Exhibit B are incorporated by reference herein.

SCHEDULE II

Free Writing Prospectuses

SCHEDULE III

Lock-up Parties

Schedule II

Exhibit A – Form of Warrant

Exhibit B – Form of Pre-Funded Warrant

Exhibit C – Form of Representative's Warrant

Exhibit D – Form of Lock-up Agreement

Exhibit 4.1

COMMON SHARE PURCHASE WARRANT

XORTX THERAPEUTICS, INC.

Warrant Shares: _____ Original Issue Date: [__], 2021

THIS COMMON SHARE PURCHASE WARRANT (the "Warrant") certifies that, for value received, _____ or its assigns (the "Holder") is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the date hereof (the "Initial Exercise Date") and on or prior to 5:00 p.m. (Eastern time) on __, 202[ ] (the "Termination Date") but not thereafter, to subscribe for and purchase from XORTX Therapeutics, Inc., a company organized under the laws of British Columbia (the "Company"), up to _____ Common Shares (as subject to adjustment hereunder, the "Warrant Shares"). The purchase price of one Common Share under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b). This Warrant is being issued pursuant to that certain Underwriting Agreement, dated [__], 2021, between the Company and A.G.P./Alliance Global Partners, as representative of the underwriters thereunder (the "Underwriting Agreement"). This Warrant shall initially be issued and maintained in the form of a security held in book-entry form and the Depository Trust Company or its nominee ("DTC") shall initially be the sold registered holder of the Warrant, subject a Holder's right to elect to receive the Warrant in certificated form pursuant to the terms of the Warrant Agent Agreement, in which case this sentence shall not apply.

Section 1. Definitions. In addition to the terms defined elsewhere in this Warrant, the following terms have the meanings indicated in this Section 1:

"Affiliate" means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 405 under the Securities Act.

"Bid Price" means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Shares are then listed or quoted on a Trading Market, the bid price of the Common Shares for the time in question (or the nearest preceding date) on the Trading Market on which the Common Shares are then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (Eastern time) to 4:02 p.m. (Eastern time)), (b) if OTCQX or OTCQB is not a Trading Market, the volume weighted average price of the Common Shares for such date (or the nearest preceding date) on OTCQX or OTCQB, as applicable, (c) if the Common Shares are not then listed or quoted for trading on OTCQX or OTCQB and if prices for the Common Shares are then reported on the Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Shares so reported, or (d) in all other cases, the fair market value of a Common Share as determined by an independent appraiser selected in good faith by the Holders of a majority in interest of the Warrants then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

"Business Day" means any day except any Saturday, any Sunday, any day which is a federal legal holiday in the United States or any day on which banking institutions in the State of New York are authorized or required by law or other governmental action to close.

"Commission" means the United States Securities and Exchange Commission.

"Common Share" means the common share of the Company, no par value, and any other class of securities into which such securities may hereafter be reclassified or changed.

"Common Share Equivalents" means any securities of the Company or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Shares, including, without limitation, any debt, preferred shares, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Shares.

"Exchange Act" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

"Person" means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

"Registration Statement" means the Company's registration statement on Form S-1 (File No. 333-[ ]).

"Securities Act" means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

"Subsidiary" means any subsidiary of the Company and shall, where applicable, also include any direct or indirect subsidiary of the Company formed or acquired after the date hereof.

"Trading Day" means a day on which the Common Shares are traded on a Trading Market.

"Trading Market" means any of the following markets or exchanges on which the Common Shares are listed or quoted for trading on the date in question: the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange, or the OTCQX or OTCQB markets (or any successors to any of the foregoing).

"Transfer Agent" means [ ], the current transfer agent of the Company, with a mailing address of [ ] and a facsimile number of [ ], and any successor transfer agent of the Company.

"Warrant Agent Agreement " means that certain warrant agent agreement, dated on or about the Initial Exercise Date, between the Company and the Warrant Agent.

"Warrant Agent" means [the Transfer Agent] and any successor warrant agent of the Company.

"VWAP" means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Shares are then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Shares for such date (or the nearest preceding date) on the Trading Market on which the Common Shares are then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (Eastern time) to 4:02 p.m. (Eastern time)), (b) if OTCQX or OTCQB is not a Trading Market, the volume weighted average price of the Common Shares for such date (or the nearest preceding date) on OTCQX or OTCQB, as applicable, (c) if the Common Shares are not then listed or quoted for trading on OTCQX or OTCQB and if prices for the Common Shares are then reported on the Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Shares so reported, or (d) in all other cases, the fair market value of a share of Common Shares as determined by an independent appraiser selected in good faith by the holders of a majority in interest of the Warrants then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

"Warrants" means this Warrant and other Common Share purchase warrants issued by the Company pursuant to the Registration Statement.

Section 2. Exercise.

a) Exercise of Warrant. Exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Original Issue Date and on or before the Termination Date by delivery to the Company of a duly executed PDF copy submitted by e-mail (or e-mail attachment) of the Notice of Exercise in the form annexed hereto (the "Notice of Exercise"). Within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2(d)(i) herein) following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the shares specified in the applicable Notice of Exercise by wire transfer or cashier's check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date on which the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Business Day of receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.**

Notwithstanding the foregoing in this Section 2(a), a holder whose interest in this Warrant is a beneficial interest in certificate(s) representing this Warrant held in book entry form through DTC (or another established clearing corporation performing similar functions), shall effect exercises made pursuant to this Section 2(a) by delivering to DTC (or such other clearing corporation, as applicable) the appropriate instruction form for exercise, complying with the procedures to effect exercise that are required by DTC (or such other clearing corporation, as applicable), subject to the Holder's right to elect to receive a Warrant in certificated form pursuant to the terms of the Warrant Agent Agreement, in which case this sentence shall not apply.

b) Exercise Price. The exercise price per Common Share under this Warrant shall be $[___], subject to adjustment hereunder (the "Exercise Price").

c) Cashless Exercise. If at the time of exercise hereof there is no effective registration statement registering, or the prospectus contained therein is not available for the issuance of the Warrant Shares to the Holder, then this Warrant may also be exercised, in whole or in part, at such time by means of a "cashless exercise" in which the Holder shall be entitled to receive a number of Warrant Shares equal to the quotient obtained by dividing [(A-B) (X)] by (A), where:

(A) = as applicable: (i) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise if such Notice of Exercise is (1) both executed and delivered pursuant to Section 2(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 2(a) hereof on a Trading Day prior to the opening of "regular trading hours" (as defined in Rule 600(b)(68) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the Bid Price of the Common Shares on the principal Trading Market as reported by Bloomberg L.P. as of the time of the Holder's execution of the applicable Notice of Exercise if such Notice of Exercise is executed during "regular trading hours" on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of "regular trading hours" on a Trading Day) pursuant to Section 2(a) hereof or (iii) the VWAP on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is both executed and delivered pursuant to Section 2(a) hereof after the close of "regular trading hours" on such Trading Day;

(B) = the Exercise Price of this Warrant, as adjusted hereunder; and

(X) = the number of Warrant Shares that would be issuable upon exercise of this Warrant in accordance with the terms of this Warrant if such exercise were by means of a cash exercise rather than a cashless exercise.

If Warrant Shares are issued in such a cashless exercise, the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised. The Company agrees not to take any position contrary to this Section 2(c).

d) Mechanics of Exercise.

i. Delivery of Warrant Shares upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder's or its designee's balance account with The Depository Trust Company through its Deposit or Withdrawal at Custodian system ("DWAC") if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by Holder or (B) this Warrant is being exercised via cashless exercise, and otherwise by physical delivery of a certificate, registered in the Company's share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is the earliest of (i) two (2) Trading Days after the delivery to the Company of the Notice of Exercise, (ii) one (1) Trading Day after delivery of the aggregate Exercise Price to the Company and (iii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the "Warrant Share Delivery Date"). Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each $1,000 of Warrant Shares subject to such exercise (based on the VWAP of the Common Shares on the date of the applicable Notice of Exercise), $10 per Trading Day (increasing to $20 per Trading Day on the fifth Trading Day after such liquidated damages begin to accrue) for each Trading Day after such Warrant Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise. The Company agrees to maintain a transfer agent that is a participant in the FAST program so long as this Warrant remains outstanding and exercisable. As used herein, "Standard Settlement Period" means the standard settlement period, expressed in a number of Trading Days, on the Company's primary Trading Market with respect to the Common Shares as in effect on the date of delivery of the Notice of Exercise.

ii. Delivery of New Warrants upon Exercise. If this Warrant shall have been exercised in part, the Company shall, at the request of a Holder and upon surrender of this Warrant certificate, at the time of delivery of the Warrant Shares, deliver to the Holder a new Warrant evidencing the rights of the Holder to purchase the unpurchased Warrant Shares called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant.

iii. Rescission Rights. If the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares pursuant to Section 2(d)(i) by the Warrant Share Delivery Date, then the Holder will have the right to rescind such exercise.

iv. Compensation for Buy-In on Failure to Timely Deliver Warrant Shares upon Exercise. In addition to any other rights available to the Holder, if the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares in accordance with the provisions of Section 2(d)(i) above pursuant to an exercise on or before the Warrant Share Delivery Date, and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, Common Shares to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "Buy-In"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the Common Shares so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of Common Shares that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Shares having a total purchase price of $11,000 to cover a Buy-In with respect to an attempted exercise of Common Shares with an aggregate sale price giving rise to such purchase obligation of $10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder $1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver Common Shares upon exercise of the Warrant as required pursuant to the terms hereof.

v. No Fractional Shares or Scrip. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of this Warrant. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such exercise, the Company shall, at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Exercise Price or round up to the next whole share.

vi. Charges, Taxes and Expenses. Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that, in the event that Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto duly executed by the Holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Exercise and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Warrant Shares.

vii. Closing of Books. The Company will not close its stockholder books or records in any manner which prevents the timely exercise of this Warrant, pursuant to the terms hereof.

e) Holder's Exercise Limitations. The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, to the extent that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder's Affiliates (such Persons, "Attribution Parties")), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of Common Shares beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of Common Shares issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of Common Shares which would be issuable upon (i) exercise of the remaining, non-exercised portion of this Warrant beneficially owned by the Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or non-converted portion of any other securities of the Company (including, without limitation, any other Common Share Equivalents) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 2(e), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 2(e) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 2(e), in determining the number of outstanding Common Shares, a Holder may rely on the number of outstanding Common Shares as reflected in (A) the Company's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Transfer Agent setting forth the number of Common Shares outstanding. Upon the written or oral request of a Holder, the Company shall within one Trading Day confirm orally and in writing to the Holder the number of Common Shares then outstanding. In any case, the number of outstanding Common Shares shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding Common Shares was reported. The "Beneficial Ownership Limitation" shall be 4.99% (or, upon election by a Holder prior to the issuance of any Warrants, 9.99%) of the number of Common Shares outstanding immediately after giving effect to the issuance of Common Shares issuable upon exercise of this Warrant. The Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2(e), provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of Common Shares outstanding immediately after giving effect to the issuance of Common Shares upon exercise of this Warrant held by the Holder and the provisions of this Section 2(e) shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61st day after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2(e) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant.

Section 3. Certain Adjustments.

a) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions on its Common Shares or any other equity or equity equivalent securities payable in Common Shares (which, for avoidance of doubt, shall not include any Common Shares issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding Common Shares into a larger number of shares, (iii) combines (including by way of reverse stock split) outstanding Common Shares into a smaller number of shares, or (iv) issues by reclassification of the Common Shares any shares of capital stock of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of Common Shares (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of Common Shares outstanding immediately after such event, and the number of shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged. Any adjustment made pursuant to this Section 3(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

b) Intentionally omitted.

c) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 3(a) above, if at any time the Company grants, issues or sells any Common Share Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of Common Shares (the "Purchase Rights"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of Common Shares acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of Common Shares are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, that, to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such Common Shares as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

d) Pro Rata Distributions. During such time as this Warrant is outstanding, if the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of Common Shares, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a "Distribution"), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of Common Shares acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of Common Shares are to be determined for the participation in such Distribution (provided, however, that, to the extent that the Holder's right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any Common Shares as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

e) Fundamental Transaction. If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Shares are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Shares, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Shares or any compulsory share exchange pursuant to which the Common Shares are effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires more than 50% of the outstanding Common Shares (not including any Common Shares held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination) (each a "Fundamental Transaction"), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 2(e) on the exercise of this Warrant), the number of Common Shares of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the "Alternate Consideration") receivable as a result of such Fundamental Transaction by a holder of the number of Common Shares for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2(e) on the exercise of this Warrant). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one Common Share in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Shares are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. Notwithstanding anything to the contrary, in the event of a Fundamental Transaction, the Company or any Successor Entity (as defined below) shall, at the Holder's option, exercisable at any time concurrently with, or within thirty (30) days after, the consummation of the Fundamental Transaction (or, if later, the date of the public announcement of the applicable Fundamental Transaction), purchase this Warrant from the Holder by paying to the Holder an amount of cash equal to the Black Scholes Value (as defined below) of the remaining unexercised portion of this Warrant on the date of the consummation of such Fundamental Transaction; provided, however, if the Fundamental Transaction is not within the Company's control, including not approved by the Company's Board of Directors, Holder shall only be entitled to receive from the Company or any Successor Entity, as of the date of consummation of such Fundamental Transaction, the same type or form of consideration (and in the same proportion), at the Black Scholes Value of the unexercised portion of this Warrant, that is being offered and paid to the holders of Common Shares of the Company in connection with the Fundamental Transaction, whether that consideration be in the form of cash, stock or any combination thereof, or whether the holders of Common Shares are given the choice to receive from among alternative forms of consideration in connection with the Fundamental Transaction; provided, further, that if holders of Common Shares of the Company are not offered or paid any consideration in such Fundamental Transaction, such holders of Common Shares will be deemed to have received common shares of the Successor Entity (which may be the Company following such Fundamental Transaction) in such Fundamental Transaction. "Black Scholes Value" means the value of this Warrant based on the Black-Scholes Option Pricing Model obtained from the "OV" function on Bloomberg, L.P. ("Bloomberg") determined as of the day of consummation of the applicable Fundamental Transaction for pricing purposes and reflecting (A) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the time between the date of the public announcement of the applicable contemplated Fundamental Transaction and the Termination Date, (B) an expected volatility equal to the 100 day volatility obtained from the HVT function on Bloomberg (determined utilizing a 365 day annualization factor) as of the Trading Day immediately following the public announcement of the applicable contemplated Fundamental Transaction, (C) the underlying price per share used in such calculation shall be the greater of (i) the sum of the price per share being offered in cash, if any, plus the value of any non-cash consideration, if any, being offered in such Fundamental Transaction and (ii) the greater of (x) the highest VWAP during the period beginning on the Trading Day immediately preceding the announcement of the applicable Fundamental Transaction (or the consummation of the applicable Fundamental Transaction, if earlier) and ending on the Trading Day of the Holder's request pursuant to this Section 3(e), and (D) a remaining option time equal to the time between the date of the public announcement of the applicable contemplated Fundamental Transaction and the Termination Date and (E) a zero cost of borrow. The payment of the Black Scholes Value will be made by wire transfer of immediately available funds within the later of (i) five Business Days of the Holder's election and (ii) the date of consummation of the Fundamental Transaction. The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the "Successor Entity") to assume in writing all of the obligations of the Company under this Warrant in accordance with the provisions of this Section 3(e) pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant which is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the Common Shares acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the Common Shares pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Warrant referring to the "Company" shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant with the same effect as if such Successor Entity had been named as the Company herein.

f) Calculations. All calculations under this Section 3 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 3, the number of Common Shares deemed to be issued and outstanding as of a given date shall be the sum of the number of Common Shares (excluding treasury shares, if any) issued and outstanding.

g) Notice to Holder.

i. Adjustment to Exercise Price. Whenever the Exercise Price is adjusted pursuant to any provision of this Section 3, the Company shall promptly deliver to the Holder by email a notice setting forth the Exercise Price after such adjustment and any resulting adjustment to the number of Warrant Shares and setting forth a brief statement of the facts requiring such adjustment.

ii. Notice to Allow Exercise by Holder. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the Common Shares, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the Common Shares, (C) the Company shall authorize the granting to all holders of the Common Shares rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Company shall be required in connection with any reclassification of the Common Shares, any consolidation or merger to which the Company is a party, any sale or transfer of all or substantially all of the assets of the Company, or any compulsory share exchange whereby the Common Shares are converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be delivered by email to the Holder at its last email address as it shall appear upon the Warrant Register of the Company, at least 20 calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Shares of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Shares of record shall be entitled to exchange their shares of the Common Shares for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange; provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided in this Warrant constitutes, or contains, material, non-public information regarding the Company or any of the Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to exercise this Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

Section 4. Transfer of Warrant.

a) Transferability. This Warrant and all rights hereunder (including, without limitation, any registration rights) are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three (3) Trading Days of the date on which the Holder delivers an assignment form to the Company assigning this Warrant in full. The Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

b) New Warrants. If this Warrant is not held in global form through DTC (or any successor depositary), this Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4(a), as to any transfer that may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the initial issuance date of this Warrant and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

c) Warrant Register. The Warrant Agent shall register this Warrant, upon records to be maintained by the Warrant Agent for that purpose (the "Warrant Register"), in the name of the record Holder hereof from time to time. The Company and the Warrant Agent may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

Section 5. Miscellaneous.

a) No Rights as Stockholder until Exercise; No Settlement in Cash. This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a stockholder of the Company prior to the exercise hereof as set forth in Section 2(d)(i), except as expressly set forth in Section 3. Without limiting any rights of a Holder to receive Warrant Shares on a "cashless exercise" pursuant to Section 2(c) or to receive cash payments pursuant to Section 2(d)(i) and Section 2(d)(iv) herein, in no event shall the Company be required to net cash settle an exercise of this Warrant.

b) Loss, Theft, Destruction or Mutilation of Warrant. The Company covenants that upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant or any stock certificate relating to the Warrant Shares, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it (which, in the case of the Warrant, shall not include the posting of any bond), and upon surrender and cancellation of such Warrant or stock certificate, if mutilated, the Company will make and deliver a new Warrant or stock certificate of like tenor and dated as of such cancellation, in lieu of such Warrant or stock certificate.

c) Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Business Day, then, such action may be taken or such right may be exercised on the next succeeding Business Day.

d) Authorized Shares.

The Company covenants that, during the period the Warrant is outstanding, it will reserve from its authorized and unissued Common Shares a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of issuing the necessary Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Shares may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and nonassessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue).

Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (i) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (ii) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Warrant Shares upon the exercise of this Warrant and (iii) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof, as may be, necessary to enable the Company to perform its obligations under this Warrant.

Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

e) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof. Each party agrees that all legal proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Warrant (whether brought against a party hereto or their respective affiliates, directors, officers, shareholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the City of New York. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, Borough of Manhattan for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is improper or is an inconvenient venue for such proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Warrant and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law. If either party shall commence an action, suit or proceeding to enforce any provisions of this Warrant, the prevailing party in such action, suit or proceeding shall be reimbursed by the other party for their reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding.

f) Restrictions. The Holder acknowledges that the Warrant Shares acquired upon the exercise of this Warrant, if not registered, and the Holder does not utilize cashless exercise, will have restrictions upon resale imposed by state and federal securities laws.

g) Non-waiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies. Without limiting any other provision of this Warrant, if the Company willfully and knowingly fails to comply with any provision of this Warrant, which results in any material damages to the Holder, the Company shall pay to the Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by the Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

h) Notices. Any and all notices or other communications or deliveries to be provided by the Holders hereunder including, without limitation, any Notice of Exercise, shall be in writing and delivered personally, by facsimile or e-mail, or sent by a nationally recognized overnight courier service, addressed to the Company, at XORTX Therapeutics, Inc., Suite 2400 – 745 Thurlow Street, Vancouver, British Columbia, Canada V6E 0C5, Attention: Allen Davidoff, Ph.D., Chief Executive Officer, telephone number: (403) 607-2621, email address: adavidoff@xortx.com, or such other address, telephone number or email address as the Company may specify for such purposes by notice to the Holders. Any and all notices or other communications or deliveries to be provided by the Company hereunder shall be in writing and delivered personally, by e-mail, or sent by a nationally recognized overnight courier service addressed to each Holder at the e-mail address or address of such Holder appearing on the books of the Company. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the time of transmission, if such notice or communication is delivered via facsimile at the facsimile number or via e-mail at the e-mail address set forth in this Section prior to 5:30 p.m. (Eastern time) on any date, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number or via e-mail at the e-mail address set forth in this Section on a day that is not a Trading Day or later than 5:30 p.m. (Eastern time) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Company or any Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K.

i) Limitation of Liability. No provision hereof, in the absence of any affirmative action by the Holder to exercise this Warrant to purchase Warrant Shares, and no enumeration herein of the rights or privileges of the Holder, shall give rise to any liability of the Holder for the purchase price of any Common Shares or as a stockholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

j) Remedies. The Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate.

k) Successors and Assigns. Subject to applicable securities laws, this Warrant and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of Holder. The provisions of this Warrant are intended to be for the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

l) Amendment. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company, on the one hand, and the Holder or the beneficial owner of this Warrant, on the other hand.

m) Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Warrant.

n) Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

o) Warrant Agent Agreement. If this Warrant is held in global form through DTC (or any successor depositary), this Warrant is issued subject to the Warrant Agent Agreement. To the extent any provision of this Warrant conflicts with the express provisions of the Warrant Agent Agreement, the provisions of this Warrant shall govern and be controlling.

****

(Signature Page Follows)

IN WITNESS WHEREOF, the Company has caused this Warrant to be executed by its officer thereunto duly authorized as of the date first above indicated.

XORTX THERAPEUTICS, INC.

By: _____
Name:
Title:

NOTICE OF EXERCISE

TO: XORTX THERAPEUTICS, INC.

(1) The undersigned hereby elects to purchase _____ Warrant Shares of the Company pursuant to the terms of the attached Warrant (only if exercised in full), and tenders herewith payment of the exercise price in full, together with all applicable transfer taxes, if any.

(2) Payment shall take the form of (check applicable box):

☐ in lawful money of the United States; or

☐ if permitted the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in Section 2(c), to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in Section 2(c).

(3) Please issue said Warrant Shares in the name of the undersigned or in such other name as is specified below:

_____

The Warrant Shares shall be delivered to the following DWAC Account Number:

_____

_____

_____

[SIGNATURE OF HOLDER]

Name of Investing Entity: _____

Signature of Authorized Signatory of Investing Entity: _____

Name of Authorized Signatory: _____

Title of Authorized Signatory: _____

Date: _____

ASSIGNMENT FORM

(To assign the foregoing Warrant, execute this form and supply required information. Do not use this form to purchase shares.)

FOR VALUE RECEIVED, the foregoing Warrant and all rights evidenced thereby are hereby assigned to

Name: _____
(Please Print)

Address: _____
(Please Print)

Phone Number: _____

Email Address: _____

Dated: _____ ___, _____

Holder's Signature: _____

Holder's Address: _____

Exhibit 4.2

PRE-FUNDED COMMON SHARE PURCHASE WARRANT

XORTX THERAPEUTICS, INC.

Warrant Shares: _____

THIS PRE-FUNDED COMMON SHARE PURCHASE WARRANT (the "Warrant") certifies that, for value received, _____ or its assigns (the "Holder") is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the date hereof (the "Initial Exercise Date") until this Warrant is exercised in full (the "Termination Date") but not thereafter, to subscribe for and purchase from XORTX Therapeutics, Inc., a company organized under the laws of British Columbia (the "Company"), up to _____ common shares, no par value (the "Common Shares") (as subject to adjustment hereunder, the "Warrant Shares"). The purchase price of one Common Share under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b).

Section 1. Definitions. In addition to the terms defined elsewhere in this Warrant, the following terms have the meanings indicated in this Section 1:

"Affiliate" means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 405 under the Securities Act.

"Business Day" means any day except any Saturday, any Sunday, any day which is a federal legal holiday in the United States or any day on which banking institutions in the State of New York are authorized or required by law or other governmental action to close.

"Commission" means the United States Securities and Exchange Commission.

"Common Share Equivalents" means any securities of the Company or its subsidiaries, which would entitle the holder thereof to acquire at any time Common Shares, including, without limitation, any debt, preferred shares, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Shares.

"Exchange Act" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

"Person" means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

"Securities Act" means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

"Trading Day" means a day on which the principal Trading Market is open for trading.

"Trading Market" mean any of the following markets or exchanges on which the Common Shares are listed or quoted for trading on the date in question: the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange, OTCQB or OTCQX (or any successors to any of the foregoing).

"Transfer Agent" means [ ], the current transfer agent of the Company, with a mailing address of [ ], and a facsimile number of [ ], and any successor transfer agent of the Company.

Section 2. Exercise.

a) Exercise of Warrant. Exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Initial Exercise Date and on or before the Termination Date by delivery to the Company of a duly executed facsimile copy (or .pdf copy via e-mail attachment) of the Notice of Exercise in the form annexed hereto (the "Notice of Exercise"). Within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2(d)(i) herein) following the date of exercise as aforesaid, the Holder shall deliver the unpaid portion of the aggregate Exercise Price for the Warrant Shares specified in the applicable Notice of Exercise by wire transfer or cashier's check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date on which the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Business Day of receipt of such notice. The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.

b) Exercise Price. The aggregate exercise price of this Warrant, except for a nominal exercise price of $0.0001 per Warrant Share, was pre-funded to the Company on or prior to the Initial Exercise Date and, consequently, no additional consideration (other than the nominal exercise price of $0.0001 per Warrant Share) shall be required to be paid by the Holder to any Person to effect any exercise of this Warrant. The Holder shall not be entitled to the return or refund of all, or any portion, of such pre-paid aggregate exercise price under any circumstance or for any reason whatsoever, including in the event this Warrant shall not have been exercised prior to the Termination Date. The remaining unpaid exercise price per Warrant Share shall be $0.0001, subject to adjustment hereunder (the "Exercise Price").

c) Cashless Exercise. If at any time after the Initial Exercise Date, there is no effective registration statement registering, or no current prospectus available for, the issuance of the Warrant Shares to the Holder, then the Holder may elect instead to exercise this Warrant, in whole or in part, at such time by means of a "cashless exercise" in which the Holder shall be entitled to receive a number of Warrant Shares equal to the quotient obtained by dividing [(A-B) (X)] by (A), where:

(A) = as applicable: (i) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise if such Notice of Exercise is (1) both executed and delivered pursuant to Section 2(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 2(a) hereof on a Trading Day prior to the opening of "regular trading hours" (as defined in Rule 600(b)(64) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the Bid Price of the Common Shares on the principal Trading Market as reported by Bloomberg L.P. as of the time of the Holder's execution of the applicable Notice of Exercise if such Notice of Exercise is executed during "regular trading hours" on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of "regular trading hours" on a Trading Day) pursuant to Section 2(a) hereof or (iii) the VWAP on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is both executed and delivered pursuant to Section 2(a) hereof after the close of "regular trading hours" on such Trading Day;

(B) = $0.0001, as adjusted hereunder; and

(X) = the number of Warrant Shares that would be issuable upon exercise of this Warrant in accordance with the terms of this Warrant if such exercise were by means of a cash exercise rather than a cashless exercise.

If Warrant Shares are issued in such a cashless exercise, the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised. The Company agrees not to take any position contrary to this Section 2(c).

"Bid Price" means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Shares are then listed or quoted on a Trading Market, the bid price of the Common Shares for the time in question (or the nearest preceding date) on the Trading Market on which the Common Shares are then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (Eastern time) to 4:02 p.m. (Eastern time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Shares for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Shares are not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Shares are then reported in the "Pink Sheets" published by OTC Markets Group, Inc. (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per Common Share so reported, or (d) in all other cases, the fair market value of a Common Share as determined by an independent appraiser selected in good faith by the Holders of a majority in interest of the Securities then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

"VWAP" means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Shares are then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Shares for such date (or the nearest preceding date) on the Trading Market on which the Common Share are then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (Eastern time) to 4:02 p.m. (Eastern time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Shares for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Shares are not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Shares are then reported in the "Pink Sheets" published by OTC Markets Group, Inc. (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Shares so reported, or (d) in all other cases, the fair market value of a Common Share as determined by an independent appraiser selected in good faith by the Holders of a majority in interest of the Securities then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

d) Mechanics of Exercise.

i. Delivery of Warrant Shares Upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder's or its designee's balance account with The Depository Trust Company through its Deposit or Withdrawal at Custodian system ("DWAC") if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by Holder or (B) this Warrant is being exercised via cashless exercise, and otherwise by physical delivery of a certificate, registered in the Company's share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the "Warrant Share Delivery Date"). Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each $1,000 of Warrant Shares subject to such exercise (based on the VWAP of the Common Shares on the date of the applicable Notice of Exercise), $10 per Trading Day (increasing to $20 per Trading Day on the fifth Trading Day after such liquidated damages begin to accrue) for each Trading Day after such Warrant Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise. The Company agrees to maintain a transfer agent that is a participant in the FAST program so long as this Warrant remains outstanding and exercisable. As used herein, "Standard Settlement Period" means the standard settlement period, expressed in a number of Trading Days, on the Company's primary Trading Market with respect to the Common Shares as in effect on the date of delivery of the Notice of Exercise. Notwithstanding the foregoing, with respect to any Notice(s) of Exercise delivered by 12:00 p.m. (Eastern time) on the Initial Exercise Date, which may be delivered at any time after the time of execution of the Underwriting Agreement, dated as of [_____], 2021, between the Company and A.G.P./Alliance Global Partners, as representative of the several underwriters, the Company agrees to deliver the Warrant Shares subject to such notice(s) by 4:00 p.m. (Eastern time) on the Initial Exercise Date and the Initial Exercise Date shall be the Warrant Share Delivery Date for purposes hereunder.

ii. Delivery of New Warrants Upon Exercise. If this Warrant shall have been exercised in part, the Company shall, at the request of a Holder and upon surrender of this Warrant certificate, at the time of delivery of the Warrant Shares, deliver to the Holder a new Warrant evidencing the rights of the Holder to purchase the unpurchased Warrant Shares called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant.

iii. Rescission Rights. If the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares pursuant to Section 2(d)(i) by the Warrant Share Delivery Date, then the Holder will have the right to rescind such exercise, including in the event of a Buy-In (as defined below), as described in Section 2(d)(iv) below.

iv. Compensation for Buy-In on Failure to Timely Deliver Warrant Shares Upon Exercise. In addition to any other rights available to the Holder, if the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares in accordance with the provisions of Section 2(d)(i) above pursuant to an exercise on or before the Warrant Share Delivery Date, and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, Common Shares to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "Buy-In"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the Common Shares so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder (pursuant to notice to be sent by the Holder to the Company within ten (10) days following the Warrant Share Delivery Date; if such notice is not provided by that date, the Company shall instead have the right to decide), either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of Common Shares that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Shares having a total purchase price of $11,000 to cover a Buy-In with respect to an attempted exercise of Common Shares with an aggregate sale price giving rise to such purchase obligation of $10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder $1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver Common Shares upon exercise of the Warrant as required pursuant to the terms hereof.

v. No Fractional Shares or Scrip. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of this Warrant. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such exercise, the Company shall, at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Exercise Price or round up to the next whole share.

vi. Charges, Taxes and Expenses. Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that in the event that Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto duly executed by the Holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Exercise and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Warrant Shares.

vii. Closing of Books. The Company will not close its shareholder books or records in any manner which prevents the timely exercise of this Warrant, pursuant to the terms hereof.

e) Holder's Exercise Limitations. The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, to the extent that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder's Affiliates (such Persons, " Attribution Parties")), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of Common Shares beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of Common Shares issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of Common Shares which would be issuable upon (i) exercise of the remaining, nonexercised portion of this Warrant beneficially owned by the Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or nonconverted portion of any other securities of the Company (including, without limitation, any other Common Share Equivalents) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 2(e), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 2(e) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 2(e), in determining the number of outstanding Common Shares, a Holder may rely on the number of outstanding Common Shares as reflected in (A) the Company's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Transfer Agent setting forth the number of Common Shares outstanding. Upon the written or oral request of a Holder, the Company shall within one (1) Trading Days confirm orally and in writing to the Holder the number of Common Shares then outstanding. In any case, the number of outstanding Common Shares shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding Common Shares was reported. The " Beneficial Ownership Limitation" shall be [9.99%/4.99%] of the number of Common Shares outstanding immediately after giving effect to the issuance of Common Shares issuable upon exercise of this Warrant. The Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2(e), provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of the Common Shares outstanding immediately after giving effect to the issuance of Common Shares upon exercise of this Warrant held by the Holder and the provisions of this Section 2(e) shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61st day after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2(e) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant.

Section 3. Certain Adjustments.

a) Share Dividends and Splits. If the Company, at any time while this Warrant is outstanding: (i) pays a share dividend or otherwise makes a distribution or distributions on shares of its Common Shares or any other equity or equity equivalent securities payable in Common Shares (which, for avoidance of doubt, shall not include any Common Shares issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding Common Shares into a larger number of shares, (iii) combines (including by way of reverse share split) outstanding Common Shares into a smaller number of shares or (iv) issues by reclassification of Common Shares any shares of capital stock of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of Common Shares (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of Common Shares outstanding immediately after such event, and the number of shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged, provided that the Exercise Price per share shall in any case be no lower than the par value of the Common Shares. Any adjustment made pursuant to this Section 3(a) shall become effective immediately after the record date for the determination of shareholder entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

b) Voluntary Adjustment By Company . The Company may at any time during the term of this Warrant reduce the then current Exercise Price of this Warrant to any amount and for any period of time deemed appropriate by the board of directors of the Company with the prior written consent of holders of a majority of the then outstanding Warrants issued pursuant to the Underwriting Agreement, provided that the Exercise Price per underlying Common Share shall be no lower than the par value of the Common Share as of the relevant time.

c) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 3(a) above, if at any time the Company grants, issues or sells any Common Share Equivalents or rights to purchase shares, warrants, securities or other property pro rata to the record holders of any class of Common Shares (the "Purchase Rights"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of Common Shares acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of Common Shares are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such Common Shares as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

d) Pro Rata Distributions. During such time as this Warrant is outstanding, if the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of Common Shares, by way of return of capital or otherwise (including, without limitation, any distribution of cash, shares or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a "Distribution"), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of Common Shares acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of Common Shares are to be determined for the participation in such Distribution (provided, however, to the extent that the Holder's right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any Common Shares as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

e) Fundamental Transaction. If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Shares are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Shares, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Shares or any compulsory share exchange pursuant to which the Common Shares are effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires more than 50% of the outstanding Common Shares (not including any Common Shares held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such share purchase agreement or other business combination) (each a "Fundamental Transaction"), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 2(e) on the exercise of this Warrant), the number of Common Shares of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the "Alternate Consideration") receivable as a result of such Fundamental Transaction by a holder of the number of Common Shares for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2(e) on the exercise of this Warrant). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one Common Share in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Shares are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the "Successor Entity") to assume in writing all of the obligations of the Company under this Warrant and the other Transaction Documents in accordance with the provisions of this Section 3(e) pursuant to written agreements in form and substance reasonably satisfactory to the Holder prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant which is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the Common Shares acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the Common Shares pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Warrant and the other Transaction Documents referring to the "Company" shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant and the other Transaction Documents with the same effect as if such Successor Entity had been named as the Company herein.

f) Calculations. All calculations under this Section 3 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 3, the number of Common Shares deemed to be issued and outstanding as of a given date shall be the sum of the number of Common Shares (excluding treasury shares, if any) issued and outstanding.

g) Notice to Holder.

i. Adjustment to Exercise Price. Whenever the Exercise Price is adjusted pursuant to any provision of this Section 3, the Company shall promptly deliver to the Holder by facsimile or email a notice setting forth the Exercise Price after such adjustment and any resulting adjustment to the number of Warrant Shares and setting forth a brief statement of the facts requiring such adjustment.

ii. Notice to Allow Exercise by Holder. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the Common Shares, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the Common Shares, (C) the Company shall authorize the granting to all holders of the Common Shares rights or warrants to subscribe for or purchase any capital stock of any class or of any rights, (D) the approval of any shareholders of the Company shall be required in connection with any reclassification of the Common Shares, any consolidation or merger to which the Company is a party, any sale or transfer of all or substantially all of the assets of the Company, or any compulsory share exchange whereby the Common Shares are converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be delivered by facsimile or email to the Holder at its last facsimile number or email address as it shall appear upon the Warrant Register of the Company, at least 5 calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Shares of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or stock exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Shares of record shall be entitled to exchange their Common Shares for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or stock exchange; provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice and provided, further that no notice shall be required if the information is disseminated in a press release or document filed with the Securities and Exchange Commission. To the extent that any notice provided in this Warrant constitutes, or contains, material, non-public information regarding the Company, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to exercise this Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

Section 4. Transfer of Warrant.

a) Transferability. This Warrant and all rights hereunder (including, without limitation, any registration rights) are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three (3) Trading Days of the date on which the Holder delivers an assignment form to the Company assigning this Warrant in full. The Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

b) New Warrants. This Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4(a), as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the Issue Date of this Warrant and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

c) Warrant Register. The Company shall register this Warrant, upon records to be maintained by the Company for that purpose (the "Warrant Register"), in the name of the record Holder hereof from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

Section 5. Miscellaneous.

a) No Rights as Shareholder Until Exercise. This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a shareholder of the Company prior to the exercise hereof as set forth in Section 2(d)(i), except as expressly set forth in Section 3.

b) Loss, Theft, Destruction or Mutilation of Warrant. The Company covenants that upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant or any share certificate relating to the Warrant Shares, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it (which, in the case of the Warrant, shall not include the posting of any bond), and upon surrender and cancellation of such Warrant or share certificate, if mutilated, the Company will make and deliver a new Warrant or share certificate of like tenor and dated as of such cancellation, in lieu of such Warrant or share certificate.

c) Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Business Day, then, such action may be taken or such right may be exercised on the next succeeding Business Day.

d) Authorized Shares.

The Company covenants that, during the period the Warrant is outstanding, it will reserve from its authorized and unissued Common Shares a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of issuing the necessary Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Shares may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and nonassessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue).

Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (i) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (ii) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Warrant Shares upon the exercise of this Warrant and (iii) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof, as may be, necessary to enable the Company to perform its obligations under this Warrant.

Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

e) Jurisdiction. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof. Each party agrees that all legal proceedings concerning the interpretations, enforcement and defense of this Warrant shall be commenced in the state and federal courts sitting in the City of New York. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, Borough of Manhattan for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is improper or is an inconvenient venue for such proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law. If either party shall commence an action, suit or proceeding to enforce any provisions of this Warrant, the prevailing party in such action, suit or proceeding shall be reimbursed by the other party for their reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding.

f) Restrictions. The Holder acknowledges that the Warrant Shares acquired upon the exercise of this Warrant, if not registered and the Holder does not utilize cashless exercise, will have restrictions upon resale imposed by state and federal securities laws.

g) Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies, notwithstanding the fact that the Holder's right to exercise this Warrant terminates on the Termination Date. If the Company willfully and knowingly fails to comply with any provision of this Warrant, which results in any material damages to the Holder, the Company shall pay to the Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by the Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

h) Notices. Any notices, consents, waivers or other document or communications required or permitted to be given or delivered under the terms of this Warrant, including, without limitation, any Notice of Exercise, must be in writing and will be deemed to have been delivered: (i) upon receipt, if delivered personally; (ii) when sent, if sent by facsimile (provided confirmation of transmission is mechanically or electronically generated and kept on file by the sending party); (iii) when sent, if sent by e-mail (provided that such sent e-mail is kept on file (whether electronically or otherwise) by the sending party and the sending party does not receive an automatically generated message from the recipient's e-mail server that such e-mail could not be delivered to such recipient) and (iv) if sent by overnight courier service, one (1) Trading Day after deposit with an overnight courier service with next day delivery specified, in each case, properly addressed to the party to receive the same. The addresses, facsimile numbers and e-mail addresses for such communications shall be:

If to the Company:

XORTX Therapeutics, Inc.
Suite 2400 – 745 Thurlow Street
Vancouver, British Columbia
Canada V6E 0C5
Attention: Allen Davidoff, Ph.D., Chief Executive Officer
Telephone number: (403) 607-2621
Email address: adavidoff@xortx.com

With a copy (for informational purposes only) to:

Dorsey & Whitney LLP
[ ]
Attention: [ ]
Email: [ ]

If to a Holder, to its address, facsimile number or e-mail address set forth herein or on the books and records of the Company.

i) Limitation of Liability. No provision hereof, in the absence of any affirmative action by the Holder to exercise this Warrant to purchase Warrant Shares, and no enumeration herein of the rights or privileges of the Holder, shall give rise to any liability of the Holder for the purchase price of any Common Shares or as a shareholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

j) Remedies. The Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate.

k) Successors and Assigns. Subject to applicable securities laws, this Warrant and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of Holder. The provisions of this Warrant are intended to be for the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

l) Amendment. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company and the Holder.

m) Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Warrant.

n) Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

****

(Signature Page Follows)

IN WITNESS WHEREOF, the Company has caused this Warrant to be executed by its officer thereunto duly authorized as of the date first above indicated.

XORTX THERAPEUTICS, INC.

By: _____
Name:
Title:

EXHIBIT A

NOTICE OF EXERCISE

TO: XORTX THERAPEUTICS, INC.

(1) The undersigned hereby elects to purchase _____ Warrant Shares of the Company pursuant to the terms of the attached Warrant (only if exercised in full), and tenders herewith payment of the exercise price in full, together with all applicable transfer taxes, if any.

(2) Payment shall take the form of (check applicable box):

[ ] in lawful money of the United States; or

[ ] if permitted, the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in subsection 2(c), to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in subsection 2(c).

(3) Please issue said Warrant Shares in the name of the undersigned or in such other name as is specified below:

_____

The Warrant Shares shall be delivered to the following DWAC Account Number:

_____

_____

_____

[SIGNATURE OF HOLDER]

Name of Investing Entity: _____

Signature of Authorized Signatory of Investing Entity: _____

Name of Authorized Signatory: _____

Title of Authorized Signatory: _____

Date: _____

EXHIBIT B

ASSIGNMENT FORM

(To assign the foregoing Warrant, execute this form and supply required information. Do not use this form to purchase shares.)

FOR VALUE RECEIVED, the foregoing Warrant and all rights evidenced thereby are hereby assigned to

Name: _____
(Please Print)

Address: _____
(Please Print)

Phone Number: _____

Email Address: _____

Dated:_____ _____, _____

Holder's Signature: _____

Holder's Address: _____

_____

Exhibit 4.3

Form of Underwriter's Warrant Agreement

THE REGISTERED HOLDER OF THIS PURCHASE WARRANT BY ITS ACCEPTANCE HEREOF, AGREES THAT IT WILL NOT SELL, TRANSFER OR ASSIGN THIS PURCHASE WARRANT EXCEPT AS HEREIN PROVIDED AND THE REGISTERED HOLDER OF THIS PURCHASE WARRANT AGREES THAT IT WILL NOT SELL, TRANSFER, ASSIGN, PLEDGE OR HYPOTHECATE THIS PURCHASE WARRANT FOR A PERIOD OF ONE HUNDRED EIGHTY DAYS FOLLOWING THE EFFECTIVE DATE (DEFINED BELOW) TO ANYONE OTHER THAN (I) A.G.P./ALLIANCE GLOBAL PARTNERS OR AN UNDERWRITER OR A SELECTED DEALER IN CONNECTION WITH THE OFFERING, OR (II) A BONA FIDE OFFICER OR PARTNER OF A.G.P./ALLIANCE GLOBAL PARTNERS OR OF ANY SUCH UNDERWRITER OR SELECTED DEALER.

THIS PURCHASE WARRANT IS EXERCISABLE ON [_____], 2021. VOID AFTER 5:00 P.M., EASTERN TIME, [_____], 2026 [**DATE THAT IS FIVE (5) YEARS FROM THE EFFECTIVE DATE OF THE REGISTRATION STATEMENT**].

COMMON SHARE PURCHASE WARRANT

For the Purchase of [_____] Common Shares

of

XORTX THERAPEUTICS, INC.

1. Purchase Warrant. THIS CERTIFIES THAT, in consideration of funds duly paid by or on behalf of A.G.P./Alliance Global Partners ("**Holder**"), as registered owner of this Purchase Warrant, to Xortx Therapeutics, Inc., a company organized under the laws of British Columbia (the "**Company**"), Holder is entitled, at any time or from time to time from [__], 2021 (the "**Commencement Date**"), and at or before 5:00 p.m., Eastern time, [__], 2026 (the date that is five (5) years following the Effective Date, the "**Expiration Date**"), but not thereafter, to subscribe for, purchase and receive, in whole or in part, up to [__] common shares (the "**Shares**") of the Company, no par value per share (the "**Common Shares**"), subject to adjustment as provided in Section 6 hereof. If the Expiration Date is a day on which banking institutions are authorized by law to close, then this Purchase Warrant may be exercised on the next succeeding day which is not such a day in accordance with the terms herein. During the period ending on the Expiration Date, the Company agrees not to take any action that would terminate this Purchase Warrant. This Purchase Warrant is initially exercisable at $[___] per Share [1]; provided, however, that upon the occurrence of any of the events specified in Section 6 hereof, the rights granted by this Purchase Warrant, including the exercise price per Share and the number of Shares to be received upon such exercise, shall be adjusted as therein specified. The term "**Exercise Price**" shall mean the initial exercise price or the adjusted exercise price, depending on the context. For the avoidance of doubt, this Purchase Warrant will be exercisable at any time, and from time to time, in whole or in part, from the Commencement Date (as defined in the Underwriting Agreement (as defined below)), which period shall not extend further than five (5) years from the Effective Date in compliance with FINRA Rule 5110(f)(2)(G)(i).

2. Exercise.

2.1 Exercise Form. In order to exercise this Purchase Warrant, the exercise form attached hereto must be duly executed and completed and delivered to the Company, together with this Purchase Warrant and payment of the Exercise Price for the Shares being purchased payable in cash by wire transfer of immediately available funds to an account designated by the Company or by certified check or official bank check. If the subscription rights represented hereby shall not be exercised at or before 5:00 p.m., Eastern time, on the Expiration Date, this Purchase Warrant shall become and be void without further force or effect, and all rights represented hereby shall cease and expire.

[1] [ ]% of the public offering price.

2.2 Cashless Exercise. If at any time after the Commencement Date there is no effective registration statement registering, or no current prospectus available for, the resale of the Shares by the Holder, then in lieu of exercising this Purchase Warrant at such time, by payment of cash or check payable to the order of the Company pursuant to Section 2.1 above, Holder may elect to receive the number of Shares equal to the value of this Purchase Warrant (or the portion thereof being exercised), by surrender of this Purchase Warrant to the Company, together with the exercise form attached hereto, in which event the Company shall issue Shares to Holder in accordance with the following formula:

X = Y(A-B)/A

Where,

X = The number of Shares to be issued to Holder;
Y = The number of Shares for which the Purchase Warrant is being exercised;
A = The fair market value of one Share; and
B = The Exercise Price.

For purposes of this Section 2.2, the fair market value of a Share is defined as follows:

(i) if the Company's common shares are traded on a securities exchange, the value shall be deemed to be the closing price on such exchange prior to the exercise form being submitted in connection with the exercise of the Purchase Warrant; or
(ii) if the Company's common shares are actively traded over-the-counter, the value shall be deemed to be the closing bid prior to the exercise form being submitted in connection with the exercise of the Purchase Warrant; if there is no active public market, the value shall be the fair market value thereof, as determined in good faith by the Company's Board of Directors.

If Warrant Shares are issued in such a "cashless exercise," the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act of 1933, as amended (the "**Securities Act**"), the Warrant Shares shall take on the registered characteristics of the Warrants being exercised, and the holding period of the Warrants being exercised may be tacked on to the holding period of the Warrant Shares. The Company agrees not to take any position contrary to this Section 2.2.

2.3 Legend. Each certificate for the securities purchased under this Purchase Warrant shall bear a legend as follows unless such securities have been registered under the Securities Act:

"The securities represented by this certificate have not been registered under the Securities Act of 1933, as amended (the "**Securities Act**"), or applicable state law. Neither the securities nor any interest therein may be offered for sale, sold or otherwise transferred except pursuant to an effective registration statement under the Securities Act, or pursuant to an exemption from registration under the Securities Act and applicable state law which, in the opinion of counsel to the Company, is available."

2.4 Cash Payment. For the avoidance of doubt, the Company shall not be required to make any cash payments or net cash settlement to any registered holder in lieu of issuance of Shares.

3. Transfer.

3.1 General Restrictions. The registered Holder of this Purchase Warrant agrees by his, her or its acceptance hereof, that this Purchase Warrant and the securities issuable hereunder shall not be sold during the Offering, or sold, transferred, assigned, pledged, or hypothecated, or be the subject of any hedging, short sale, derivative, put, or call transaction that would result in the effective economic disposition of this Purchase Warrant or the securities issuable hereunder by any person for a period of one hundred eighty (180) days immediately following the Effective Date (as defined in the Underwriting Agreement (as defined below)), except as provided for in FINRA Rule 5110(g)(2). On and after 180 days after the Effective Date, transfers to others may be made subject to compliance with or exemptions from applicable securities laws. In order to make any permitted assignment, the Holder must deliver to the Company the assignment form attached hereto duly executed and completed, together with the Purchase Warrant and payment of all transfer taxes, if any, payable in connection therewith. The Company shall within five (5) Business Days transfer this Purchase Warrant on the books of the Company and shall execute and deliver a new Purchase Warrant or Purchase Warrants of like tenor to the appropriate assignee(s) expressly evidencing the right to purchase the aggregate number of Shares purchasable hereunder or such portion of such number as shall be contemplated by any such assignment.

3.2 Restrictions Imposed by the Securities Act. The securities evidenced by this Purchase Warrant shall not be transferred unless and until: (i) the Company has received the opinion of counsel for the Holder that the securities may be transferred pursuant to an exemption from registration under the Securities Act and applicable state securities laws, the availability of which is established to the reasonable satisfaction of the Company (the Company hereby agreeing that the opinion of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. shall be deemed satisfactory evidence of the availability of an exemption), or (ii) a registration statement or a post-effective amendment to the registration statement relating to the offer and sale of such securities has been filed by the Company and declared effective by the U.S. Securities and Exchange Commission (the "**Commission**") and compliance with applicable state securities law has been established.

4. Registration Rights.

4.1 Demand Registration.

4.1.1 Grant of Right. The Company, upon written demand (a "**Demand Notice**") of the Holder(s) of at least 51% of the Purchase Warrants and/or the underlying Shares ("**Majority Holders**"), agrees to register, on one occasion, all or any portion of the Shares underlying the Purchase Warrants (collectively, the "**Registrable Securities**"). On such occasion, the Company will file a registration statement with the Commission covering the Registrable Securities within thirty (30) days after receipt of a Demand Notice and use its commercially reasonable efforts to have the registration statement declared effective as promptly as practicable thereafter, subject to compliance with review by the Commission; provided, however, that if the Demand Notice is issued within 50 days prior to the beginning of the Company's fiscal year, the 30 day period shall be extended until 80 days after the last day of the prior fiscal year; and provided further that the Company shall not be required to comply with a Demand Notice if the Company has filed a registration statement with respect to which the Holder is entitled to piggyback registration rights pursuant to Section 4.2 hereof and the Holder has elected to participate in the offering covered by such registration statement. The demand for registration may be made at any time during a period of five (5) years beginning on the Commencement Date. The Company covenants and agrees to give written notice of its receipt of any Demand Notice by any Holder(s) to all other registered Holders of the Purchase Warrants and/or the Registrable Securities within ten (10) days after the date of the receipt of any such Demand Notice.

4.1.2 Terms. The Company shall bear all fees and expenses attendant to the registration of the Registrable Securities pursuant to Section 4.1.1, but the Holders shall pay any and all underwriting commissions and the expenses of any legal counsel selected by the Holders to represent them in connection with the sale of the Registrable Securities. The Company agrees to use its commercially reasonable efforts to cause the filing required herein to become effective as promptly as practicable and to qualify or register the Registrable Securities in such States as are reasonably requested by the Holder(s); provided, however, that in no event shall the Company be required to register the Registrable Securities in a State in which such registration would cause: (i) the Company to be obligated to register or license to do business in such State or submit to general service of process in such State, or (ii) the principal shareholders of the Company to be obligated to escrow their shares of the Company. The Company shall use its commercially reasonable efforts to cause any registration statement filed pursuant to the demand right granted under Section 4.1.1 to remain effective for a period of at least twelve (12) consecutive months after the date that the Holders of the Registrable Securities covered by such registration statement are first given the opportunity to sell all of such securities. The Holders shall only use the prospectuses provided by the Company to sell the shares covered by such registration statement, and will immediately cease to use any prospectus furnished by the Company if the Company advises the Holder that such prospectus may no longer be used due to a material misstatement or omission, or if the Company determines in good faith that such suspension of use is necessary to delay the disclosure of material non-public information concerning the Company, the disclosure of which at the time is not, in the good faith opinion of the Company, in the best interests of the Company. Notwithstanding the provisions of this Section 4.1.2, the Holder shall be entitled to a demand registration under this Section 4.1.2 on only one (1) occasion and such demand registration right shall terminate on the fifth anniversary of the effectiveness of the registration statement in accordance with FINRA Rule 5110(f)(2)(H)(iv).

4.2 "Piggy-Back" Registration.

4.2.1 Grant of Right. In addition to the demand right of registration described in Section 4.1 hereof, the Holder shall have the right, for a period of no more than seven (7) years from the date of effectiveness of the registration statement in accordance with FINRA Rule 5110(f)(2)(G)(v), to include the Shares underlying the Purchase Warrant (collectively, the "**Registrable Securities**") as part of any other registration of securities filed by the Company (other than in connection with a transaction contemplated by Rule 145(a) promulgated under the Securities Act or pursuant to Form S-8 or any equivalent form); provided, however, that if, solely in connection with any primary underwritten public offering for the account of the Company, the managing underwriter(s) thereof shall, in its reasonable discretion, impose a limitation on the number of Common Shares which may be included in the registration statement because, in such underwriter(s)' judgment, marketing or other factors dictate such limitation is necessary to facilitate public distribution, then the Company shall be obligated to include in such registration statement only such limited portion of the Registrable Securities with respect to which the Holder requested inclusion hereunder as the underwriter shall reasonably permit. Any exclusion of Registrable Securities shall be made pro rata among the Holders seeking to include Registrable Securities in proportion to the number of Registrable Securities sought to be included by such Holders; provided, however, that the Company shall not exclude any Registrable Securities unless the Company has first excluded all outstanding securities, the holders of which are not entitled to inclusion of such securities in such registration statement or are not entitled to pro rata inclusion with the Registrable Securities.

4.2.2 Terms. The Company shall bear all fees and expenses attendant to registering the Registrable Securities pursuant to Section 4.2.1 hereof, but the Holders shall pay any and all underwriting commissions and the expenses of any legal counsel selected by the Holders to represent them in connection with the sale of the Registrable Securities. In the event of such a proposed registration, the Company shall furnish the then Holders of outstanding Registrable Securities with not less than thirty (30) days written notice prior to the proposed date of filing of such registration statement. Such notice to the Holders shall continue to be given for each registration statement filed by the Company until such time as all of the Registrable Securities have been sold by the Holder. The holders of the Registrable Securities shall exercise the "piggy-back" rights provided for herein by giving written notice within ten (10) days of the receipt of the Company's notice of its intention to file a registration statement. Except as otherwise provided in this Purchase Warrant, there shall be no limit on the number of times the Holder may request registration under this Section 4.2.2; provided, however, that such registration rights shall terminate on the sixth anniversary of the Commencement Date.

4.3 General Terms.

4.3.1 Indemnification. The Company shall indemnify the Holder(s) of the Registrable Securities to be sold pursuant to any registration statement hereunder and each person, if any, who controls such Holders within the meaning of Section 15 of the Securities Act or Section 20 (a) of the Securities Exchange Act of 1934, as amended ("**Exchange Act**"), against all loss, claim, damage, expense or liability (including all reasonable attorneys' fees and other expenses reasonably incurred in investigating, preparing or defending against any claim whatsoever) to which any of them may become subject under the Securities Act, the Exchange Act or otherwise, arising from such registration statement but only to the same extent and with the same effect as the provisions pursuant to which the Company has agreed to indemnify the Underwriters contained in Section 9(a) of the Underwriting Agreement between the Underwriters and the Company, dated as of [_____], 2021 (the "**Underwriting Agreement**"). The Holder(s) of the Registrable Securities to be sold pursuant to such registration statement, and their successors and assigns, shall severally, and not jointly, indemnify the Company, against all loss, claim, damage, expense or liability (including all reasonable attorneys' fees and other expenses reasonably incurred in investigating, preparing or defending against any claim whatsoever) to which they may become subject under the Securities Act, the Exchange Act or otherwise, arising from information furnished by or on behalf of such Holders, or their successors or assigns, in writing, for specific inclusion in such registration statement to the same extent and with the same effect as the provisions contained in Section 9(b) of the Underwriting Agreement pursuant to which the Underwriters have agreed to indemnify the Company.

4.3.2 Exercise of Purchase Warrants. Nothing contained in this Purchase Warrant shall be construed as requiring the Holder(s) to exercise their Purchase Warrants prior to or after the initial filing of any registration statement or the effectiveness thereof.

4.3.3 Documents Delivered to Holders. The Company shall furnish upon written request to each Holder participating in any of the foregoing offerings and to each underwriter of any such offering, if any, a signed counterpart, addressed to such Holder or underwriter, of: (i) an opinion of counsel to the Company, dated the effective date of such registration statement (and, if such registration includes an underwritten public offering, an opinion dated the date of the closing under any underwriting agreement related thereto), and (ii) a "cold comfort" letter dated the effective date of such registration statement (and, if such registration includes an underwritten public offering, a letter dated the date of the closing under the underwriting agreement) signed by the independent registered public accounting firm which has issued a report on the Company's financial statements included in such registration statement, in each case covering substantially the same matters with respect to such registration statement (and the prospectus included therein) and, in the case of such accountants' letter, with respect to events subsequent to the date of such financial statements, as are customarily covered in opinions of issuer's counsel and in accountants' letters delivered to underwriters in underwritten public offerings of securities. The Company shall also deliver promptly to each Holder participating in the offering requesting the correspondence and memoranda described below and to the managing underwriter, if any, copies of all correspondence between the Commission and the Company, its counsel or auditors and all memoranda relating to discussions with the Commission or its staff with respect to the registration statement and permit each Holder and underwriter to do such investigation, upon reasonable advance notice, with respect to information contained in or omitted from the registration statement as it deems reasonably necessary to comply with applicable securities laws or rules of FINRA. Such investigation shall include access to books, records and properties and opportunities to discuss the business of the Company with its officers and independent auditors, all to such reasonable extent and at such reasonable times as any such Holder shall reasonably request.

4.3.4 Underwriting Agreement. The Company shall enter into an underwriting agreement with the managing underwriter(s), if any, selected by any Holders whose Registrable Securities are being registered pursuant to this Section 4, which managing underwriter shall be reasonably satisfactory to the Company. Such agreement shall be reasonably satisfactory in form and substance to the Company, each Holder and such managing underwriters, and shall contain such representations, warranties and covenants by the Company and such other terms as are customarily contained in agreements of that type used by the managing underwriter. The Holders shall be parties to any underwriting agreement relating to an underwritten sale of their Registrable Securities and may, at their option, require that any or all the representations, warranties and covenants of the Company to or for the benefit of such underwriters shall also be made to and for the benefit of such Holders. Such Holders shall not be required to make any representations or warranties to or agreements with the Company or the underwriters except as they may relate to such Holders, their Shares and their intended methods of distribution.

4.3.5 Documents to be Delivered by Holder(s). Each of the Holder(s) participating in any of the foregoing offerings shall furnish to the Company a completed and executed questionnaire provided by the Company requesting information customarily sought of selling security holders.

4.3.6 Damages. Should the registration or the effectiveness thereof required by Sections 4.1 and 4.2 hereof be delayed by the Company or the Company otherwise fails to comply in any material respect with such provisions, the Holder(s) shall, in addition to any other legal or other relief available to the Holder(s), be entitled to obtain specific performance or other equitable (including injunctive) relief against the threatened breach of such provisions or the continuation of any such breach, without the necessity of proving actual damages and without the necessity of posting bond or other security.

5. New Purchase Warrants to be Issued.

5.1 Partial Exercise or Transfer. Subject to the restrictions in Section 3 hereof, this Purchase Warrant may be exercised or assigned in whole or in part. In the event of the exercise or assignment hereof in part only, upon surrender of this Purchase Warrant for cancellation, together with the duly executed exercise or assignment form and funds sufficient to pay any Exercise Price and/or transfer tax if exercised pursuant to Section 2.1 hereto, the Company shall cause to be delivered to the Holder without charge a new Purchase Warrant of like tenor to this Purchase Warrant in the name of the Holder evidencing the right of the Holder to purchase the number of Shares purchasable hereunder as to which this Purchase Warrant has not been exercised or assigned.

5.2 Lost Certificate. Upon receipt by the Company of evidence satisfactory to it of the loss, theft, destruction or mutilation of this Purchase Warrant and of reasonably satisfactory indemnification or the posting of a bond, the Company shall execute and deliver a new Purchase Warrant of like tenor and date. Any such new Purchase Warrant executed and delivered as a result of such loss, theft, mutilation or destruction shall constitute a substitute contractual obligation on the part of the Company.

6. Adjustments.

6.1 Adjustments to Exercise Price and Number of Securities. The Exercise Price and the number of Shares underlying the Purchase Warrant shall be subject to adjustment from time to time as hereinafter set forth:

6.1.1 Share Dividends; Split Ups. If, after the date hereof, and subject to the provisions of Section 6.3 below, the number of outstanding Common Shares is increased by a share dividend payable in Shares or by a split up of Common Shares or other similar event, then, on the effective day thereof, the number of Shares purchasable hereunder shall be increased in proportion to such increase in outstanding Common Shares, and the Exercise Price shall be proportionately decreased.

6.1.2 Aggregation of Shares. If, after the date hereof, and subject to the provisions of Section 6.3 below, the number of outstanding Common Shares is decreased by a consolidation, combination or reclassification of Common Shares or other similar event, then, on the effective date thereof, the number of Shares purchasable hereunder shall be decreased in proportion to such decrease in outstanding Common Shares, and the Exercise Price shall be proportionately increased.

6.1.3 Replacement of Securities upon Reorganization, etc. In case of any reclassification or reorganization of the outstanding Common Shares other than a change covered by Section 6.1.1 or 6.1.2 hereof or that solely affects the par value of such Common Shares, or in the case of any share reconstruction or amalgamation or consolidation of the Company with or into another corporation (other than a consolidation or share reconstruction or amalgamation in which the Company is the continuing corporation and that does not result in any reclassification or reorganization of the outstanding Common Shares), or in the case of any sale or conveyance to another corporation or entity of the property of the Company as an entirety or substantially as an entirety in connection with which the Company is dissolved, the Holder of this Purchase Warrant shall have the right thereafter (until the expiration of the right of exercise of this Purchase Warrant) to receive upon the exercise hereof, for the same aggregate Exercise Price payable hereunder immediately prior to such event, the kind and amount of Common Shares or other securities or property (including cash) receivable upon such reclassification, reorganization, share reconstruction or amalgamation, or consolidation, or upon a dissolution following any such sale or transfer, by a Holder of the number of Shares of the Company obtainable upon exercise of this Purchase Warrant immediately prior to such event; and if any reclassification also results in a change in Shares covered by Section 6.1.1 or 6.1.2, then such adjustment shall be made pursuant to Sections 6.1.1, 6.1.2 and this Section 6.1.3. The provisions of this Section 6.1.3 shall similarly apply to successive reclassifications, reorganizations, share reconstructions or amalgamations, or consolidations, sales or other transfers.

6.1.4 Changes in Form of Purchase Warrant. This form of Purchase Warrant need not be changed because of any change pursuant to this Section 6.1, and Purchase Warrants issued after such change may state the same Exercise Price and the same number of Shares as are stated in the Purchase Warrants initially issued pursuant to this Agreement. The acceptance by any Holder of the issuance of new Purchase Warrants reflecting a required or permissive change shall not be deemed to waive any rights to an adjustment occurring after the Commencement Date or the computation thereof.

6.2 Substitute Purchase Warrant. In case of any consolidation of the Company with, or share reconstruction or amalgamation of the Company with or into, another corporation (other than a consolidation or share reconstruction or amalgamation which does not result in any reclassification or change of the outstanding Common Shares), the corporation formed by such consolidation or share reconstruction or amalgamation shall execute and deliver to the Holder a supplemental Purchase Warrant providing that the holder of each Purchase Warrant then outstanding or to be outstanding shall have the right thereafter (until the stated expiration of such Purchase Warrant) to receive, upon exercise of such Purchase Warrant, the kind and amount of shares and other securities and property receivable upon such consolidation or share reconstruction or amalgamation, by a holder of the number of Shares of the Company for which such Purchase Warrant might have been exercised immediately prior to such consolidation, share reconstruction or amalgamation, sale or transfer. Such supplemental Purchase Warrant shall provide for adjustments which shall be identical to the adjustments provided for in this Section 6. The above provision of this Section shall similarly apply to successive consolidations or share reconstructions or amalgamations.

6.3 Elimination of Fractional Interests. The Company shall not be required to issue certificates representing fractions of Shares upon the exercise of the Purchase Warrant, nor shall it be required to issue scrip or pay cash in lieu of any fractional interests, it being the intent of the parties that all fractional interests shall be eliminated by rounding any fraction up or down, as the case may be, to the nearest whole number of Shares or other securities, properties or rights.

7. Reservation and Listing. The Company shall at all times reserve and keep available out of its authorized Common Shares, solely for the purpose of issuance upon exercise of the Purchase Warrants, such number of Shares or other securities, properties or rights as shall be issuable upon the exercise thereof. The Company covenants and agrees that, upon exercise of the Purchase Warrants and payment of the Exercise Price therefor, in accordance with the terms hereby, all Shares and other securities issuable upon such exercise shall be duly and validly issued, fully paid and non- assessable and not subject to preemptive rights of any shareholder. The Company further covenants and agrees that upon exercise of the Purchase Warrants and payment of the exercise price therefor, all Shares and other securities issuable upon such exercise shall be duly and validly issued, fully paid and non-assessable and not subject to preemptive rights of any shareholder. As long as the Purchase Warrants shall be outstanding, the Company shall use its commercially reasonable efforts to cause all Shares issuable upon exercise of the Purchase Warrants to be listed (subject to official notice of issuance) on all national securities exchanges (or, if applicable, on the OTC Bulletin Board or any successor trading market) on which the Shares issued to the public in the Offering may then be listed and/or quoted.

8. Certain Notice Requirements.

8.1 Holder's Right to Receive Notice. Nothing herein shall be construed as conferring upon the Holders the right to vote or consent or to receive notice as a shareholder for the election of directors or any other matter, or as having any rights whatsoever as a shareholder of the Company. If, however, at any time prior to the expiration of the Purchase Warrants and their exercise, any of the events described in Section 8.2 shall occur, then, in one or more of said events, the Company shall give written notice of such event at least fifteen days prior to the date fixed as a record date or the date of closing the transfer books for the determination of the shareholders entitled to such dividend, distribution, conversion or exchange of securities or subscription rights, or entitled to vote on such proposed dissolution, liquidation, winding up or sale. Such notice shall specify such record date or the date of the closing of the transfer books, as the case may be. Notwithstanding the foregoing, the Company shall deliver to each Holder a copy of each notice given to the other shareholders of the Company at the same time and in the same manner that such notice is given to the shareholders.

8.2 Events Requiring Notice. The Company shall be required to give the notice described in this Section 8 upon one or more of the following events: (i) if the Company shall take a record of the holders of its Shares for the purpose of entitling them to receive a dividend or distribution payable otherwise than in cash, or a cash dividend or distribution payable otherwise than out of retained earnings, as indicated by the accounting treatment of such dividend or distribution on the books of the Company, (ii) the Company shall offer to all the holders of its Shares any additional shares of the Company or securities convertible into or exchangeable for shares of the Company, or any option, right or warrant to subscribe therefor, or (iii) a dissolution, liquidation or winding up of the Company (other than in connection with a consolidation or share reconstruction or amalgamation) or a sale of all or substantially all of its property, assets and business shall be proposed.

8.3 Notice of Change in Exercise Price. The Company shall, promptly after an event requiring a change in the Exercise Price pursuant to Section 6 hereof, send notice to the Holders of such event and change ("**Price Notice**"). The Price Notice shall describe the event causing the change and the method of calculating same and shall be certified as being true and accurate by the Company's Chief Financial Officer.

8.4 Transmittal of Notices. All notices, requests, consents and other communications under this Purchase Warrant shall be in writing and shall be deemed to have been duly made when hand delivered, or mailed by express mail or private courier service: (i) if to the registered Holder of the Purchase Warrant, to the address of such Holder as shown on the books of the Company, or (ii) if to the Company, to following address or to such other address as the Company may designate by notice to the Holders:

If to the Holder:

A.G.P./Alliance Global Partners ("**A.G.P.**")
590 Madison Avenue, 36th Floor
New York, New York 10022
Attn: Chris Pravecek
Fax No.: (203) 662-9771

with a copy (which shall not constitute notice) to:

Mintz, Levin, Cohn, Ferris, Glovsky and Popeo P.C.
666 Third Avenue
New York, New York 10017
Attention: Ivan K. Blumenthal
E-mail: IKBlumenthal@mintz.com

If to the Company:

XORTX Therapeutics, Inc.
Suite 2400 – 745 Thurlow Street
Vancouver, British Columbia
Canada V6E 0C5
Attention: Allen Davidoff, Ph.D., Chief Executive Officer
Telephone number: (403) 607-2621
Email address: adavidoff@xortx.com

with a copy (which shall not constitute notice) to:

Dorsey & Whitney LLP
[ ]
Attention: [ ]
Email: [ ]

9. Miscellaneous.

9.1 Amendments. The Company and A.G.P. may from time to time supplement or amend this Purchase Warrant without the approval of any of the Holders in order to cure any ambiguity, to correct or supplement any provision contained herein that may be defective or inconsistent with any other provisions herein, or to make any other provisions in regard to matters or questions arising hereunder that the Company and A.G.P. may deem necessary or desirable and that the Company and A.G.P. deem shall not adversely affect the interest of the Holders. All other modifications or amendments shall require the written consent of and be signed by the party against whom enforcement of the modification or amendment is sought.

9.2 Headings. The headings contained herein are for the sole purpose of convenience of reference, and shall not in any way limit or affect the meaning or interpretation of any of the terms or provisions of this Purchase Warrant.

9.3 Entire Agreement. This Purchase Warrant (together with the other agreements and documents being delivered pursuant to or in connection with this Purchase Warrant) constitutes the entire agreement of the parties hereto with respect to the subject matter hereof, and supersedes all prior agreements and understandings of the parties, oral and written, with respect to the subject matter hereof.

9.4 Binding Effect. This Purchase Warrant shall inure solely to the benefit of and shall be binding upon, the Holder and the Company and their permitted assignees, respective successors, legal representative and assigns, and no other person shall have or be construed to have any legal or equitable right, remedy or claim under or in respect of or by virtue of this Purchase Warrant or any provisions herein contained.

9.5 Governing Law; Submission to Jurisdiction; Trial by Jury. This Purchase Warrant shall be governed by and construed and enforced in accordance with the laws of the State of New York, without giving effect to conflict of laws principles thereof. The Company hereby agrees that any action, proceeding or claim against it arising out of, or relating in any way to this Purchase Warrant shall be brought and enforced in the New York Supreme Court, County of New York, or in the United States District Court for the Southern District of New York, and irrevocably submits to such jurisdiction, which jurisdiction shall be exclusive. The Company hereby waives any objection to such exclusive jurisdiction and that such courts represent an inconvenient forum. Any process or summons to be served upon the Company may be served by transmitting a copy thereof by registered or certified mail, return receipt requested, postage prepaid, addressed to it at the address set forth in Section 8 hereof. Such mailing shall be deemed personal service and shall be legal and binding upon the Company in any action, proceeding or claim. The Company and the Holder agree that the prevailing party(ies) in any such action shall be entitled to recover from the other party(ies) all of its reasonable attorneys' fees and expenses relating to such action or proceeding and/or incurred in connection with the preparation therefor. The Company (on its behalf and, to the extent permitted by applicable law, on behalf of its shareholders and affiliates) and the Holder hereby irrevocably waive, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Agreement or the transactions contemplated hereby.

9.6 Waiver, etc. The failure of the Company or the Holder to at any time enforce any of the provisions of this Purchase Warrant shall not be deemed or construed to be a waiver of any such provision, nor to in any way affect the validity of this Purchase Warrant or any provision hereof or the right of the Company or any Holder to thereafter enforce each and every provision of this Purchase Warrant. No waiver of any breach, non-compliance or non-fulfillment of any of the provisions of this Purchase Warrant shall be effective unless set forth in a written instrument executed by the party or parties against whom or which enforcement of such waiver is sought; and no waiver of any such breach, non-compliance or non-fulfillment shall be construed or deemed to be a waiver of any other or subsequent breach, non-compliance or non- fulfillment.

9.7 Execution in Counterparts. This Purchase Warrant may be executed in one or more counterparts, and by the different parties hereto in separate counterparts, each of which shall be deemed to be an original, but all of which taken together shall constitute one and the same agreement, and shall become effective when one or more counterparts has been signed by each of the parties hereto and delivered to each of the other parties hereto. Such counterparts may be delivered by facsimile transmission or other electronic transmission.

9.8 Exchange Agreement. As a condition of the Holder's receipt and acceptance of this Purchase Warrant, Holder agrees that, at any time prior to the complete exercise of this Purchase Warrant by Holder, if the Company and A.G.P. enter into an agreement (" **Exchange Agreement**") pursuant to which they agree that all outstanding Purchase Warrants will be exchanged for securities or cash or a combination of both, then Holder shall agree to such exchange and become a party to the Exchange Agreement.

[Signature Page Follows]

IN WITNESS WHEREOF, the Company has caused this Purchase Warrant to be signed by its duly authorized officer as of the _____ day of _____, 2021.

XORTX THERAPEUTICS, INC.

By: _____
Name:
Title:

[Form to be used to exercise Purchase Warrant]

Date: _____, 20__

The undersigned hereby elects irrevocably to exercise the Purchase Warrant for_____ common shares, no par value per share (the "**Shares**"), of Xortx Therapeutics, Inc., a company organized under the laws of British Columbia (the "**Company**"), and hereby makes payment of $____ (at the rate of $____ per Share) in payment of the Exercise Price pursuant thereto. Please issue the Shares as to which this Purchase Warrant is exercised in accordance with the instructions given below and, if applicable, a new Purchase Warrant representing the number of Shares for which this Purchase Warrant has not been exercised.

or

The undersigned hereby elects irrevocably to convert its right to purchase Shares of the Company under the Purchase Warrant for ___ Shares, as determined in accordance with the following formula:

$$X = \frac{Y\ (A-B)}{A}$$

Where,

X = The number of Shares to be issued to Holder;
Y = The number of Shares for which the Purchase Warrant is being exercised;
A = The fair market value of one Share which is equal to $___; and
B = The Exercise Price which is equal to $___ per share

The undersigned agrees and acknowledges that the calculation set forth above is subject to confirmation by the Company and any disagreement with respect to the calculation shall be resolved by the Company in its sole discretion.

Please issue the Shares as to which this Purchase Warrant is exercised in accordance with the instructions given below and, if applicable, a new Purchase Warrant representing the number of Shares for which this Purchase Warrant has not been converted.

Signature_____

Signature Guaranteed_____

INSTRUCTIONS FOR REGISTRATION OF SECURITIES

Name _____
(Print in Block Letters)

Address _____
_____
_____

NOTICE: The signature to this form must correspond with the name as written upon the face of the Purchase Warrant without alteration or enlargement or any change whatsoever, and must be guaranteed by a bank, other than a savings bank, or by a trust company or by a firm having membership on a registered national securities exchange.

[Form to be used to assign Purchase Warrant]

ASSIGNMENT

(To be executed by the registered Holder to effect a transfer of the within Purchase Warrant):

FOR VALUE RECEIVED, _____ does hereby sell, assign and transfer unto the right to purchase common shares, no par value per share, of Xortx Therapeutics, Inc., a company organized under the laws of British Columbia (the "**Company**"), evidenced by the Purchase Warrant and does hereby authorize the Company to transfer such right on the books of the Company.

Dated: _____, 20__

Signature_____

Signature Guaranteed _____

NOTICE: The signature to this form must correspond with the name as written upon the face of the within Purchase Warrant without alteration or enlargement or any change whatsoever, and must be guaranteed by a bank, other than a savings bank, or by a trust company or by a firm having membership on a registered national securities exchange.

Exhibit 4.4

IN WITNESS WHEREOF, the Corporation has caused this Warrant to be executed by a duly authorized officer.

DATED for reference this ●th day of February, 2021.

XORTX THERAPEUTICS INC.

Per: _____

Authorized Signatory

(See terms and conditions attached hereto)

SCHEDULE "A"
TERMS AND CONDITIONS

Terms and Conditions attached to the Warrant issued by **XORTX Therapeutics Inc.** and dated for reference February ●, 2021.

ARTICLE 1
INTERPRETATION

1.1 Definitions

In these Terms and Conditions, unless there is something in the subject matter or context inconsistent therewith:

(a) **"Common Shares"** means the common shares in the capital of the Corporation to be issued pursuant to the exercise of Warrants;

(b) **"Corporation"** means XORTX Therapeutics Inc. unless and until a successor corporation shall occur in the manner prescribed in Article 6, and thereafter "Corporation" shall mean such successor corporation;

(c) **"Corporation's Auditors"** means an independent firm of accountants duly appointed as auditors of the Corporation;

(d) **"Exchange"** means the Canadian Securities Exchange or such other stock exchange on which the Corporation's Common Shares are listed and posted for trading;

(e) **"Exercise Price"** means the price of $0.40 per common share;

(f) **"Expiry Time"** means 4:30 p.m. (Calgary time) on February ●, 2024, unless this Warrant is earlier terminated under the provisions of Section 3.5 below;

(g) **"herein", "hereby"** and similar expressions refer to these Terms and Conditions as the same may be amended or modified from time to time; and the expression "Article" and "Section" followed by a number refer to the specified Article or Section of these Terms and Conditions;

(h) **"Issue Date"** means the issue date of the Warrant shown on the face page of the Warrant Certificate;

(i) **"person"** means an individual, corporation, partnership, trustee or any unincorporated organization and words importing persons have a similar meaning;

(j) "**Up-listing**" means the listing (or co-listing) for trading of the Common Shares on a national securities exchange in the United States of America;

(k) **"Warrant"** means the warrant to acquire Common Shares evidenced by the Warrant Certificate; and

(l) **"Warrant Certificate"** means the certificate to which these Terms and Conditions are attached.

1.2 Interpretation Not Affected by Headings

(a) The division of these Terms and Conditions into Articles and Sections, and the insertion of headings are for convenience of reference only and shall not affect the construction or interpretation thereof.

(b) Words importing the singular number include the plural and vice versa and words importing the masculine gender include the feminine and neuter genders.

1.3 Applicable Law

The terms hereof and of the Warrant shall be construed in accordance with the laws of the Province of Alberta and the laws of Canada applicable thereto.

ARTICLE 2
ISSUE OF WARRANT

2.1 Issue of Warrants

That number of Warrants set out on the Warrant Certificate are hereby created and authorized to be issued.

2.2 Additional Warrants

Subject to any other written agreement between the Corporation and the Warrantholder, the Corporation may at any time and from time to time undertake further equity or debt financing and may issue additional Common Shares, warrants or grant options or similar rights to purchase Common Shares to any person.

2.3 Issue in Substitution for Lost Warrants

If the Warrant Certificate becomes mutilated, lost, destroyed or stolen:

(a) the Corporation shall issue and deliver a new Warrant Certificate of like date and tenor as the one mutilated, lost, destroyed or stolen, in exchange for and in place of and upon cancellation of such mutilated, lost, destroyed or stolen Warrant Certificate; and

(b) the holder shall bear the cost of the issue of a new Warrant Certificate hereunder and in the case of the loss, destruction or theft of the Warrant Certificate, shall furnish to the Corporation such evidence of Joss, destruction, or theft as shall be satisfactory to the Corporation in its discretion and the Corporation may also require the holder to furnish indemnity in an amount and form satisfactory to the Corporation in its discretion, and shall pay the reasonable charges of the Corporation in connection therewith.

2.4 Warrantholder Not a Shareholder

The Warrant shall not constitute the holder a shareholder of the Corporation, nor entitle it to any right or interest in respect thereof except as may be expressly provided in the Warrant.

ARTICLE 3
EXERCISE OF THE WARRANT

3.1 Method of Exercise of the Warrant

The right to purchase Common Shares conferred by this Warrant Certificate may be exercised, prior to the Expiry Time, by the holder surrendering it, with a duly completed and executed exercise form substantially in the form attached hereto as **Schedule "B"** and cash or a certified cheque payable to or to the order of the Corporation, at par in Calgary, Alberta, for the Exercise Price applicable at the time of surrender in respect of the Common Shares subscribed for in lawful money of Canada, to the Corporation.

3.2 Effect of Exercise of the Warrant

(a) Upon due surrender and payment pursuant to Section 3.1 hereof, the Common Shares so subscribed for shall be issued as fully paid and non-assessable shares and the holder shall become the holder of record of such Common Shares on the date of such surrender and payment; and

(b) Within five business days of such exercise of any Warrants hereunder, the Corporation shall forthwith cause the issuance to the holder a certificate for the Common Shares purchased as aforesaid.

3.3 Subscription for Less than Entitlement

The holder may subscribe for and purchase a number of Common Shares less than the number which it is entitled to purchase pursuant to the surrendered Warrant Certificate. In such event, the holder shall receive a Warrant Certificate for the balance of the Common Shares which it is entitled to purchase pursuant to the Warrant Certificate which were not then purchased.

3.4 Expiration of the Warrant

After the Expiry Time all rights hereunder shall wholly cease and terminate and the Warrant shall be void and of no effect.

3.5 Forced Conversion Right

If the volume weighted average price for the Corporation's common shares on the Exchange is greater than $1.20 per share for a period often (10) consecutive trading days, then the Corporation may give notice to the holders by way of a news release (the "**Notice**") notifying such Holder that the Warrants must be exercised within thirty (30) calendar days from the date of delivery of such Notice, otherwise the Warrants will expire at 4:30 p.m. (Calgary time) on the 30th day after the date of delivery of the Notice.

3.6 Hold Periods and Legending of Share Certificate

If any of the Warrants are exercised prior to June ●, 2021, the certificates representing the Common Shares to be issued pursuant to such exercise shall bear the following legend:

"UNLESS PERMITTED UNDER SECURITIES LEGISLATION, THE HOLDER OF THE SECURITIES MUST NOT TRADE THE SECURITIES BEFORE JUNE ●, 2021."

"THE SECURITIES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE UNITED STATES SECURITIES ACT OF 1933, AS AMENDED (THE "U.S. SECURITIES ACT"), OR ANY STATE SECURITIES LAWS. THE HOLDER HEREOF, BY PURCHASING THESE SECURITIES, AGREES FOR THE BENEFIT OF XORTX THERAPEUTICS INC. (THE "CORPORATION") THAT SUCH SECURITIES MAY BE OFFERED, SOLD, PLEDGED OR OTHERWISE TRANSFERRED ONLY: (A) TO THE CORPORATION, (B) OUTSIDE THE UNITED STATES IN ACCORDANCE WITH RULE 904 OF REGULATION S UNDER THE U.S. SECURITIES ACT ("REGULATION S"), (C) IN ACCORDANCE WITH (1) RULE 144A UNDER THE U.S. SECURITIES ACT OR (2) RULE 144 UNDER THE U.S. SECURITIES ACT, IF AVAILABLE, OR (D) PURSUANT TO ANOTHER EXEMPTION OR EXCLUSION FROM REGISTRATION UNDER THE U.S. SECURITIES ACT, AND IN EACH CASE, IN ACCORDANCE WITH ALL APPLICABLE STATE SECURITIES LAWS, AFTER, IN THE CASE OF TRANSFERS PURSUANT TO CLAUSE (C)(2) OR (D) (OR IF REQUIRED BY THE CORPORATION, OR ITS TRANSFER AGENT, CLAUSE (B)) ABOVE, THE HOLDER HAS PROVIDED TO THE CORPORATION A LEGAL OPINION OF COUNSEL OF RECOGNIZED STANDING OR OTHER EVIDENCE, REASONABLY SATISFACTORY TO THE CORPORATION, TO THE EFFECT THAT THE SALE OF SUCH SECURITIES IS NOT REQUIRED TO BE REGISTERED UNDER THE U.S. SECURITIES ACT OR APPLICABLE STATE SECURITIES LAWS."; and

THESE SECURITIES MAY NOT CONSTITUTE "GOOD DELIVERY" IN SETTLEMENT OF TRANSACTIONS ON CANADIAN STOCK EXCHANGES."

3.7 Warrants for Fractions of Shares

To the extent that the holder is entitled to receive on the exercise or partial exercise of any Warrants, a fraction of a Common Share, such right may be exercised in respect of such fraction only in combination with another Warrant which in the aggregate entitle the holder to receive a whole number of Common Shares.

ARTICLE 4
ADJUSTMENTS

4.1 Adjustments

The number of Common Shares purchasable upon the exercise of each Warrant and the Exercise Price shall be subject to adjustment as follows:

(a) in the event the Corporation shall:

(i) pay a dividend in Common Shares or make a distribution in Common Shares;

(ii) subdivide its outstanding Common Shares;

(iii) combine its outstanding Common Shares into a smaller number of Common Shares; or

(iv) issue by reclassification of its Common Shares other securities of the Corporation (including any such reclassification in connection with a consolidation, merger, amalgamation or other combination in which the Corporation is the surviving corporation),

the number of Common Shares (or other securities) purchasable upon exercise of each Warrant immediately prior thereto shall be adjusted so that the Warrantholder shall be entitled to receive the kind and number of Common Shares or other securities of the Corporation which it would have owned or have been entitled to receive after the happening of any of the events described above, had such Warrant been exercised immediately prior to the happening of such event or any record date with respect thereto. An adjustment made pursuant to this subsection (a) shall become effective immediately after the effective date of such event retroactive to the record date, if any, for such event.

[In addition, at any time prior to or concurrently with an Up-listing, if the Corporation issues or sells any Common Shares at a price less than the Exercise Price, then as of the close of business on the day of such issuance or sale, the Exercise Price shall be adjusted to be equal to the price of such issuance or sale (the "**Ratchet Protection**").][1] The Warrantholder acknowledges and agrees that the Ratchet Protection shall expire upon completion of any Up-listing.

(b) In case the Corporation shall issue rights, options or warrants to all or substantially all holders of its outstanding Common Shares, without any charge to such holders, entitling them (for a period within 45 days after the record date mentioned below) to subscribe for or purchase Common Shares at a price per share which is lower than 95% of the current market price at the record date mentioned below than the then current market price per Common Share (as determined in accordance with subsection (d) below), the number of Common Shares thereafter purchasable upon the exercise of each Warrant shall be determined by multiplying the number of Common Shares theretofore purchasable upon exercise of each Warrant by a fraction, of which the numerator shall be the number of Common Shares outstanding on the date of issuance of such rights, options or warrants plus the number of additional Common Shares offered for subscription or purchase, and of which the denominator shall be the number of Common Shares outstanding on the date of issuance of such rights, options or warrants plus the number of shares which the aggregate offering price of the total number of Common Shares so offered would purchase at the current market price per Common Share at such record date. Such adjustment shall be made whenever such rights, options or warrants are issued, and shall become effective immediately after the record date for the determination of shareholders entitled to receive such rights, options or warrants.

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[1] My understanding was that the warrant exercise price would not ratchet all the way down to the price at which the shares are issued, since the Exercise Price is CDN $0.40, as opposed to CDN $0.25. It would ratchet down to the same proportion that CDN $0.40 is to CDN $0.25. Is that no longer the case?

(c) In case the Corporation shall distribute to all or substantially all holders of its Common Shares evidences of its indebtedness or assets (excluding cash dividends or distributions payable out of consolidated earnings or earned surplus and dividends or distributions referred to in subsection (a) above or in subsection (d) below or rights, options or warrants, or convertible or exchangeable securities containing the right to subscribe for or purchase Common Shares (excluding those referred to in subsection (b) above)), then in each case the number of Common Shares thereafter purchasable upon the exercise of each Warrant shall be determined by multiplying the number of Common Shares theretofore purchasable upon the exercise of each Warrant by a fraction, of which the numerator shall be the then current market price per Common Share (as determined in accordance with subsection (d) below) on the date of such distribution, and of which the denominator shall be the then current market price per Common Share less the then fair value (as determined by the board of directors of the Corporation, acting reasonably) of the portion of the assets or evidences of indebtedness so distributed or of such subscription rights, options or warrants, or of such convertible or exchangeable securities applicable to one Common Share. Such adjustment shall be made whenever any such distribution is made, and shall become effective on the date of distribution retroactive to the record date for the determination of shareholders entitled to receive such distribution.

In the event of the distribution by the Corporation to all or substantially all of the holders of its Common Shares of shares of a subsidiary or securities convertible or exercisable for such shares, then in lieu of an adjustment in the number of Common Shares purchasable upon the exercise of each Warrant, the Warrantholder of each Warrant, upon the exercise thereof, shall receive from the Corporation, such subsidiary or both, as the Corporation shall reasonably determine, the shares or other securities to which such Warrantholder would have been entitled if such Warrantholder had exercised such Warrant immediately prior thereto, all subject to further adjustment as provided in this section 4.1 provided, however, that no adjustment in respect of dividends or interest on such shares or other securities shall be made during the term of a Warrant or upon the exercise of a Warrant.

(d) For the purpose of any computation under subsections (b) and (c) of this section 4.1, the current market price per Common Share at any date shall be the weighted average price per Common Share for twenty-five (25) consecutive trading days, commencing not more than 45 trading days before such date on the stock exchange on which the Common Shares are then traded; provided if the Common Shares are then traded on more than one stock exchange, then on the stock exchange on which the largest volume of Common Shares were traded during such twenty-five (25) consecutive trading day period. The weighted average price per Common Share shall be determined by dividing the aggregate sale price of all Common Shares sold on such exchange or market, as the case may be, during the said twenty-five (25) consecutive trading days by the total number of shares so sold. For purposes of this subsection (d), trading day means, with respect to a stock exchange, a day on which such exchange is open for the transaction of business. Should the Common Shares not be listed on any stock exchange the current market price per Common Share at any date shall be determined by the board of directors of the Corporation, acting reasonably.

(e) In any case in which this Article 4 shall require that any adjustment in the Exercise Price be made effective immediately after a record date for a specified event, the Corporation may elect to defer until the occurrence of the event the issuance, to the holder of any Warrant exercised after that record date, of the Common Shares and other shares of the Corporation, if any, issuable upon the exercise of the Warrant over and above the Common Shares and other shares of the Corporation; provided, however, that the Corporation shall deliver to the holder an appropriate instrument evidencing the holder's right to receive such additional shares upon the occurrence of the event requiring such adjustment.

(f) No adjustment in the number of Common Shares purchasable hereunder shall be required unless such adjustment would require an increase or decrease of at least one percent (1%) in the number of Common Shares purchasable upon the exercise of each Warrant; provided, however, that any adjustments which by reason of this subsection (f) are not required to be made shall be carried forward and taken into account in any subsequent adjustment. All calculations shall be made to the nearest one-hundredth of a share.

(g) Wherever the number of Common Shares purchasable upon the exercise of each Warrant is adjusted, as herein provided, the Exercise Price payable upon exercise of each Warrant shall be adjusted by multiplying such Exercise Price immediately prior to such adjustment by a fraction, of which the numerator shall be the number of Common Shares purchasable upon the exercise of such Warrant immediately prior to such adjustment, and of which the denominator shall be the number of Common Shares purchasable immediately thereafter.

(h) No adjustment in the number of Common Shares purchasable upon the exercise of each Warrant need by made under subsections (b) and (c) if, the Corporation issues or distributes to the Warrantholder the rights, options, warrants, or convertible or exchangeable securities, or evidences of indebtedness or assets referred to in those subsections which the Warrantholder would have been entitled to receive had the Warrants been exercised prior to the happening of such event or the record date with respect thereto.

(i) In the event that at any time, as a result of an adjustment made pursuant to subsection (a) above, the Warrantholder shall become entitled to purchase any securities of the Corporation other than Common Shares, thereafter the number of such other shares so purchasable upon exercise of each Warrant and the Exercise Price of such shares shall be subject to adjustment from time to time in a manner and on terms as nearly equivalent as practicable to the provisions with respect to the Common Shares contained in subsections (a) through (h), inclusive, above, and the provisions of sections 4.2 through 4.4, inclusive, of this Article 4 with respect to the Common Shares, shall apply on like terms to any such other securities.

(j) Upon the expiration of any rights, options, warrants or conversion or exchange privileges granted to all or substantially all of the holders of the Corporation's outstanding Common Shares, if any thereof shall not have been exercised, the Exercise Price and the number of Common Shares purchasable upon the exercise of each Warrant shall, upon such expiration, be readjusted and shall thereafter be such as it would have been had it been originally adjusted (or had the original adjustment not been required, as the case may be) as if:

(i) the only Common Shares so issued were the Common Shares, if any, actually issued or sold upon the exercise of such rights, options, warrants or conversion or exchange rights; and

(ii) such Common Shares, if any, were issued or sold for the consideration actually received by the Corporation upon such exercise plus the aggregate consideration, if any, actually received by the Corporation for the issuance, sale or grant of all such rights, options, warrants or conversion or exchange rights whether or not exercised;

provided further, that no such readjustment shall have the effect of increasing the Exercise Price or decreasing the number of Common Shares purchasable upon the exercise of each Warrant by an amount in excess of the amount of the adjustment initially made with respect to the issuance, sale or grant of such rights, options, warrants or conversion or exchange rights.

4.2 Voluntary Adjustment by the Corporation

Subject to requisite Exchange approval, the Corporation may, at its option, at any time during the term of the Warrants, reduce the then current Exercise Price to any amount deemed appropriate by the Board of Directors of the Corporation.

4.3 Notice of Adjustment

Whenever the number of Common Shares purchasable upon the exercise of each Warrant or the Exercise Price of such Common Shares is adjusted, as herein provided, the Corporation shall promptly send to the Warrantholder by first class mail, postage prepaid, notice of such adjustment or adjustments.

4.4 No Adjustment for Dividends

Except as provided in section 4.1 of this Article 4, no adjustment in respect of any dividends shall be made during the term of a Warrant or upon the exercise of a Warrant.

4.5 Preservation of Purchase Rights Upon Merger, Consolidation, etc.

In connection with any consolidation of the Corporation with, or amalgamation or merger of the Corporation with or into, another corporation (including, without limitation, pursuant to a "takeover bid", "tender offer" or other acquisition of all or substantially all of the outstanding Common Shares) or in case of any sale, transfer or lease to another corporation of all or substantially all the property of the Corporation, the Corporation or such successor or purchasing corporation, as the case may be, shall execute with the Warrantholder an agreement that the Warrantholder shall have the right thereafter, upon payment of the Exercise Price in effect immediately prior to such action, to purchase upon exercise of each Warrant the kind and amount of shares and other securities and property which it would have owned or have been entitled to receive after the happening of such consolidation, amalgamation, merger, sale, transfer or lease had such Warrant been exercised immediately prior to such action, and the Warrantholder shall be bound to accept such shares and other securities and property in lieu of the Common Shares to which it was previously entitled; provided, however, that no adjustment in respect of dividends, interest or other income on or from such shares or other securities and property shall be made during the term of a Warrant or upon the exercise of a Warrant. Any such agreement shall provide for adjustments, which shall be as nearly equivalent as may be practicable to the adjustments provided for in this Schedule "A". The provisions of this Article 4 shall similarly apply to successive consolidations, mergers, amalgamation, sales, transfers or leases.

4.6 Determination of Adjustments

If any questions shall at any time arise with respect to the Exercise Price, such question shall be conclusively determined by the Corporation's Auditors, or, if they decline to so act, any other firm of Chartered Accountants, in Calgary, Alberta or Vancouver, British Columbia, that the Corporation may designate and the Warrantholder, acting reasonably, may approve, and who shall have access to all appropriate records and such determination shall be binding upon the Corporation and the holder.

ARTICLE 5
COVENANTS BY THE COMPANY

5.1 Reservation of Common Shares

The Corporation will reserve and there will remain unissued out of its authorized capital a sufficient number of Common Shares to satisfy the rights of acquisition provided for in the Warrant Certificate.

ARTICLE 6
MERGER AND SUCCESSORS

6.1 Corporation May Consolidate, etc. on Certain Terms

Nothing herein contained shall prevent any consolidation, amalgamation or merger of the Corporation with or into any other corporation or corporations, or a conveyance or transfer of all or substantially all the properties and estates of the Corporation as an entirety to any corporation lawfully entitled to acquire and operate same, provided, however, that the corporation formed by such consolidation, amalgamation or merger or which acquires by conveyance or transfer all or substantially all the properties and estates of the Corporation as an entirety shall, simultaneously with such amalgamation, merger, conveyance or transfer, assume the due and punctual performance and observance of all the covenants and conditions hereof to be performed or observed by the Corporation.

6.2 Successor Corporation Substituted

In case the Corporation, pursuant to section 6.1 shall be consolidated, amalgamated or merged with or into any other corporation or corporations or shall convey or transfer all or substantially all of its properties and estates as an entirety to any other corporation, the successor corporation formed by such consolidation or amalgamation, or into which the Corporation shall have been consolidated, amalgamated or merged or which shall have received a conveyance or transfer as aforesaid, shall succeed to and be substituted for the Corporation hereunder and such changes in phraseology and form (but not in substance) may be made in the Warrant Certificate and herein as may be appropriate in view of such amalgamation, merger or transfer.

ARTICLE 7
AMENDMENTS

7.1 Amendment, etc

This Warrant Certificate may only be amended by a written instrument signed by the parties hereto.

ARTICLE 8
MISCELLANEOUS

8.1 Time

Time is of the essence of the terms of this certificate.

8.2 Notice

Any notice given under or pursuant to this Warrant Certificate will be given in writing and must be delivered, or mailed by prepaid post, and addressed to the party to which notice is to be given at the address of the party set out on page one, or at another address designated by the party in writing. If notice is delivered, it will be deemed to have been given at the time of delivery. If notice is mailed, it will be deemed to have been received on the fourth business day after and excluding the date of mailing.

8.3 Transfer of Warrants

The Warrants represented by this certificate are not transferable.

SCHEDULE "B"
EXERCISE FORM

TO: **XORTX Therapeutics Inc.**

Terms which are not otherwise defined herein shall have the meanings ascribed to such terms in the Warrant Certificate held by the undersigned and issued by **XORTX Therapeutics Inc.** (the "Corporation").

The undersigned hereby exercises the right to acquire _____ Common Shares of the Corporation in accordance with and subject to the provisions of such Warrant Certificate and herewith makes payment of the purchase price in full for the said number of Common Shares.

The Common Shares are to be issued as follows:

Name: _____

Address in full: _____

_____

DATED this_____ day of _____, _____ .

_____
Signature Guaranteed

_____
(Signature of Warrantholder)

_____
Print full name

_____
Print full address

Instructions:

1. The registered holder may exercise its right to receive Common Shares by completing this form and surrendering this form and the Warrant Certificate representing the Warrants being exercised to the Corporation.

2. If the Exercise Form indicates that Common Shares are to be issued to a person or persons other than the registered holder of the Warrant Certificate, the signature of such holder of the Exercise Form must be guaranteed by an authorized officer of a chartered bank, trust company or an investment dealer who is a member of a recognized stock exchange.

3. If the Exercise Form is signed by a trustee, exercise, administrator, curator, guardian, attorney, officer of a corporation or any person acting in a judiciary or representative capacity, the certificate must be accompanied by evidence of authority to sign satisfactory to the Corporation.

Exhibit 5.1

McCarthy Tétrault LLP
Suite 4000
421-7th Avenue S.W.
Calgary AB T2P 4K9
Canada
Tel: 403-260-3500
Fax: 403-260-3501

Rick W. Pawluk
Partner
Direct Line: (403) 206-5522
Direct Fax: (403) 260-3501
Email: rpawluk@mccarthy.ca

Assistant: Cooper, Deborah
Direct Line: (403) 260-3672
Email: dcooper@mccarthy.ca

September 15, 2021

XORTX Therapeutics Inc.
c/o Suite 4000, 421-7th Avenue S.W.
Calgary, Alberta, Canada
T2P 4K9

Dear Sirs/Mesdames:

Re: XORTX Therapeutics Inc. – Registration Statement on Form F-1 (File No. 333-258741)

We have acted as United States counsel to XORTX Therapeutics Inc., a corporation incorporated under the laws of British Columbia, Canada (the "**Company**"), in connection with a Registration Statement on Form F-1 (the "**Registration Statement**") filed by the Company with the Securities and Exchange Commission (the "**Commission**") under the Securities Act of 1933, as amended (the "**Securities Act**"), relating to the offer and sale by the Company of up to a proposed maximum aggregate offering price of $17,250,000 of (i) common share units ("**Common Share Units**"), with each Common Share Unit being comprised of one common share and one common share purchase warrant (collectively, the "**Common Share Purchase Warrants**") with each whole Common Share Purchase Warrant to purchase one common share and (ii) pre-funded units ("**Pre-Funded Units**"), with each Pre-Funded Unit being comprised of one pre-funded warrant (collectively, the "**Pre-Funded Warrants**" and, together with the Common Share Purchase Warrants, the "**Offering Warrants**") to purchase one common share and one Common Share Purchase Warrant, and (B) a proposed maximum aggregate offering price of $862,500 of warrants (the "**Underwriter Warrants**" and, together with the Offering Warrants, the "**Warrants**") to purchase common shares to be issued to A.G.P./Alliance Global Partners (the "**Underwriter**") as compensation for its services pursuant to an underwriting agreement to be entered into by and between the Company and the Underwriter, substantially in the form of which filed as Exhibit 1.1 to the Registration Statement .

For purposes of this opinion letter, we have examined copies of such agreements, instruments and documents as we have deemed an appropriate basis on which to render the opinions hereinafter expressed. As to all matters of fact, we have relied on the representations and statements of fact made in the documents so reviewed and, where necessary, upon certificates or comparable documents and representations of public officials and of officers and representatives of the Company. We have not independently established the facts so relied upon by us.

In examining all documents and in providing our opinions below we have assumed that:

(a) all individuals had the requisite legal capacity;

(b) all signatures are genuine;

(c) all documents submitted to us as originals are complete and authentic and all photostatic, certified, telecopied, notarial or other copies conform to the originals;

(d) all facts set forth in the official public records, certificates and documents supplied by public officials or otherwise conveyed to us by public officials are complete, true and accurate as of the date hereof;

(e) all facts set forth in the certificates supplied by the officers of the Company are complete, true and accurate as of the date hereof; and

(f) prior to the issuance and delivery of the Common Share Units and the Pre-Funded Units, the Company will receive, in cash, the full consideration in respect thereof.

No opinion is expressed as to the adequacy of any consideration received. This opinion letter is given, and all statements herein are made, in the context of the foregoing.

Our opinion below is expressed only with respect to the laws of the province of British Columbia and of the laws of Canada applicable therein in effect on the date of this opinion. We have no responsibility or obligation to: (i) update this opinion, (ii) take into account or inform the addressees or any other person of any changes in law, facts or other developments subsequent to this date that do or may affect the opinions we express, or (iii) advise the addressees or any other person of any other change in any matter addressed in this opinion.

Based and relying upon and subject to the foregoing, we are of the opinion that the common shares of the Company comprising each of the Common Share Units and the Pre-Funded Units to be issued and sold by the Company have been duly authorized and, when such common shares are issued and paid for in accordance with the terms of the Underwriting Agreement, such common shares will be validly issued, fully paid and non-assessable shares in the capital of the Company

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement, and to the reference to our firm under the heading “Legal Matters” in the prospectus constituting part of the Registration Statement. In giving this consent, we do not admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission thereunder.

This opinion is effective as at the date hereof and is based upon laws in effect and facts in existence as at the date hereof. We express no opinion as to the effect of future laws or judicial decisions on the subject matter hereof, nor do we undertake any duty to modify this opinion to reflect subsequent facts or developments concerning the Company or developments in the law occurring after the date hereof.

Yours truly,

Exhibit 5.2

September 15, 2021

XORTX Therapeutics Inc.
Suite 4000, 421 – 7th Avenue SW
Calgary, Alberta, Canada T2P 4K9
Re: Registration Statement on Form F-1 (File No. 333-258741)

Ladies and Gentlemen:

We have acted as United States counsel to XORTX Therapeutics Inc., a corporation incorporated under the laws of British Columbia, Canada (the "Company"), in connection with a Registration Statement on Form F-1 (the "Registration Statement") filed by the Company with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Securities Act"), relating to the offer and sale by the Company of up to a proposed maximum aggregate offering price of $17,250,000 of (i) common share units ("Common Share Units"), with each Common Share Unit being comprised of one common share and one common share purchase warrant (collectively, the "Common Share Purchase Warrants") with each whole Common Share Purchase Warrant to purchase one common share and (ii) pre-funded units ("Pre-Funded Units"), with each Pre-Funded Unit being comprised of one pre-funded warrant (collectively, the "Pre-Funded Warrants" and, together with the Common Share Purchase Warrants, the "Offering Warrants") to purchase one common share and one Common Share Purchase Warrant, and (B) a proposed maximum aggregate offering price of $862,500 of warrants (the "Underwriter Warrants" and, together with the Offering Warrants, the "Warrants") to purchase common shares to be issued to A.G.P./Alliance Global Partners (the "Underwriter") as compensation for its services pursuant to an underwriting agreement to be entered into by and between the Company and the Underwriter, substantially in the form of which filed as Exhibit 1.1 to the Registration Statement .

We have examined such documents and have reviewed such questions of law as we have considered necessary or appropriate for the purposes of our opinions set forth below. In rendering our opinions set forth below, we have assumed the authenticity of all documents submitted to us as originals, the genuineness of all signatures and the conformity to authentic originals of all documents submitted to us as copies. We have also assumed the legal capacity for all purposes relevant hereto of all natural persons. As to questions of fact material to our opinions, we have relied upon certificates or comparable documents of officers and other representatives of the Company and of public officials.

Based on the foregoing, we are of the opinion that the Warrants when issued and delivered against payment of the consideration therefor, will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

Our opinions expressed above are limited to the corporate laws of the State of New York

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement, and to the reference to our firm under the heading "Legal Matters" in the prospectus constituting part of the Registration Statement. In giving this consent, we do not admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ Dorsey & Whitney LLP

AJM/AWE

Exhibit 10.2

THIS AMENDED AND RESTATED EMPLOYMENT AGREEMENT is made as of the 1st day of August, 2021

BETWEEN:

XORTX Pharma Corp., a company continued under the laws of Canada (hereinafter called the "**CORPORATION**")

-and-

Allen Davidoff, an individual residing in the City of Calgary, in the Province of Alberta (hereinafter called the "**EMPLOYEE**").

WHEREAS the CORPORATION is principally engaged in the business of biotechnology research and development, and in particular developing drugs and therapeutics and accumulating and protecting intellectual property in respect of the foregoing;

AND WHEREAS the CORPORATION is desirous of employing the EMPLOYEE on the terms, conditions and for the considerations as hereinafter set forth and the EMPLOYEE wishes to accept such employment with the CORPORATION;

AND WHEREAS the parties desire to enter into this Agreement to set forth their respective rights and obligations;

NOW THEREFORE THIS AGREEMENT WITNESSETH that in consideration of the premises, the mutual covenants and agreements herein contained and other good and valuable consideration, the parties hereto mutually covenant and agree as follows:

ARTICLE 1- CONTRACT FOR SERVICES

1.1 Subject to the earlier termination of this Agreement as hereinafter provided, the CORPORATION hereby agrees employ the EMPLOYEE as President and Chief Executive Officer in accordance with the terms and provisions hereof.

1.2 The EMPLOYEE shall be responsible for and shall have such authority as is consistent with the position of President and Chief Executive Officer of the CORPORATION all subject to the power, direction and control of the Board of Directors of the CORPORATION.

1.3 Notwithstanding Section 1.2 hereof, the EMPLOYEE'S services hereunder shall be provided on the basis of the following terms and conditions:

(a) The EMPLOYEE'S title shall be President and Chief Executive Officer of the CORPORATION;

(b) the EMPLOYEE shall faithfully, honestly and diligently serve the CORPORATION and cooperate with the CORPORATION and utilize maximum professional skill and care to ensure that all services rendered hereunder are to the satisfaction of the CORPORATION, acting reasonably, and to provide any other services not specifically mentioned herein, but which by reason of his capability he knows or ought to know to be necessary to ensure that the best interests of the CORPORATION are maintained;

(c) the EMPLOYEE shall assume, obey, implement and execute such duties, directions, responsibilities, procedures, policies and lawful orders as may be determined or given by the Board of Directors of the CORPORATION from time to time and report results of same as may from time to time be determined by the Board of Directors of the CORPORATION,

(d) the EMPLOYEE will, when it is deemed by the CORPORATION to be beneficial, join in or participate with organizations, clubs, associations or groups that may provide good business contacts and learning facilities for the benefit of the CORPORATION; and

(e) the EMPLOYEE shall have the authority to make the usual contracts necessary to carry on the business of the CORPORATION in the ordinary course.

1.4 The EMPLOYEE agrees to devote the whole of his time, attention and best efforts to further the business and interests of the CORPORATION during the period of this Agreement to the exclusion of all other employment. Except in the case where the EMPLOYEE is permitted to be a director and specifically a director of My Path Metbolix Inc.

1.5 It is acknowledged and agreed between the parties hereto that the services to be provided by the EMPLOYEE hereunder are of such nature that regular business may be impossible and that the EMPLOYEE may be required to perform services in excess of eight (8) hours per day or five (5) days per week. It is also anticipated that there will be certain evenings, weekends and holidays during which the EMPLOYEE may be required to provide services. The EMPLOYEE therefore agrees that the consideration herein set forth shall be in full and complete consideration herein set forth shall be in full and complete satisfaction for his work and services to be provided hereunder, no matter when and how performed and the EMPLOYEE releases the CORPORATION from any additional pay or compensation, whatsoever which he might have by reason of any existing or future legislation or otherwise.

1.6 The services to be carried out and performed by the EMPLOYEE shall be carried out and performed in the City of Calgary in the Province of Alberta, or such other places as may be mutually agreed between the EMPLOYEE and the CORPORATION. It is understood that a reasonable amount of business travel outside of Calgary may be required.

ARTICLE 2 -TERM OF CONTRACT

2.1 Subject to earlier termination pursuant to the terms hereof, this contract for services shall be for an indefinite term from and including the date hereof,

ARTICLE 3 - COMPENSATION

3.1 In consideration of the services to be provided by the EMPLOYEE to the CORPORATION pursuant to Article 1 hereof, the CORPORATION shall pay to the EMPLOYEE an annual salary of One Hundred Ninety Thousand ($190,000) Dollars, payable twice per month in equal instalments on the 15th and the last day of each month during the term hereof

3.2 The EMPLOYEE shall be reimbursed for all reasonable expenses incurred by him in or about the execution of his services hereunder, including living expenses while absent from his city of residence, travel and meeting/entertainment expenses. A11 such expenses shall be verified by statements, receipts or other reasonable evidence satisfactory to the CORPORATION.

3.3 In accordance with the terms and conditions of the applicable benefit plan texts, as amended by the Board of Directors from time the EMPLOYEE shall be entitled to participate in all executive, medical, dental, and other health care, life insurance, group accident, long term disability, savings, profit sharing, share option, share purchase and any other benefit plans of whatsoever nature which the CORPORATION may provide from time to time. The EMPLOYEE understands and agrees that the CORPORATION monitors such plans and benefits and may, from time to time, modify or terminate the plans and benefits.

3.4 The CORPORATION will provide the EMPLOYEE with a parking stall convenient to his location of work.

ARTICLE 4- REVIEW OF COMPENSATION

4.1 The remuneration payable pursuant to Section 3.1 hereof shall be reviewed by the Board of Directors of the CORPORATION on or before the anniversary date hereof, and annually thereafter, at which time the Board of Directors shall consider such matters, as it may consider relevant and shall determine, in its absolute discretion, whether to increase the annual remuneration payable by the CORPORATION to the EMPLOYEE hereunder, provided always however, that the remuneration payable to the EMPLOYEE pursuant to Article 3 hereof sha1l not, as a result of such review, be reduced.

ARTICLE 5 - INCAPACITY

5.1 The EMPLOYEE shall be entitled to reasonable time from his services, without loss of compensation, due to sickness or illness or other incapacity.

5.2 In the event the EMPLOYEE is insured either personally or through the CORPORATION or through a group plan provided by the CORPORATION for loss of income as a result of disability and the EMPLOYEE receives compensation or disability income pursuant thereto, then the amount of remuneration which the EMPLOYEE is otherwise entitled to receive hereunder during the period of illness or incapacity shall be reduced by the amount of compensation or disability income paid by such insurer to the EMPLOYEE and the EMPLOYEE covenants and agrees that he shall immediately advise the CORPORATION from time to time of the receipt of any such disability income paid by such insurer to the EMPLOYEE.

ARTICLE 6 - CONFIDENTIAL INFORMATION

6.1 The EMPLOYEE covenants and agrees that during the term hereof and for a period of five (5) years thereafter, he will keep in strict confidence and shall not use, directly or indirectly, for any other purpose other than for the purpose of providing services hereunder, all knowledge, information (whether oral or written) and materials obtained or acquired during the course of his providing services hereunder relating to the CORPORATION or its business and affairs. Other than information disclosed or divulged to the Board of Directors and duly authorized officers and employees of the CORPORATION, the EMPLOYEE will not disclose, divulge, publish or transfer, or authorize or permit anyone else to disclose, divulge, publish or transfer or use to his own advantage any suchknowledge, materials, business data or other information obtained pursuant to this Agreement or which relate in any manner to the business affairs of the CORPORATION, without the prior written consent of the CORPORATION, which consent may be arbitrarily or unreasonably withheld.

6.2 The obligation of the EMPLOYEE, as identified in Section 6.1, hereof shall not apply to such knowledge, information, material or business data obtained pursuant to this Agreement or relating in any manner to the business affairs of the CORPORATION which:

(a) was demonstrably unknown to the EMPLOYEE prior to receipt thereof pursuant to this Agreement;

(b) is available to the public in the form of written publication;

(c) shall have become available to the EMPLOYEE in good faith from a third party who has a bona fide right to disclose same; and

(d) that information which is required to be disclosed to any federal, provincial, state or local government or governmental branch, board, agency car instrumentality necessary to comply with relevant timely disclosure laws or regulatory authorities, including stock exchanges having jurisdiction in respect of securities of the CORPORATION.

ARTICLE 7 - VACATION

7.1 During the term hereof, the EMPLOYEE shall be entitled to six (6) weeks paid vacation in each calendar year hereof. The EMPLOYEE understands and agrees that vacation is to be taken at a time mutually agreed upon between the EMPLOYEE and the CORPORATION.

ARTICLE 8 – NON-ASSIGNABILITY

8.1 This contract for services and all other rights, benefits, and privileges herein conferred are personal to the EMPLOYEE and accordingly may not be assigned by the EMPLOYEE.

ARTICLE 9 -TERMINATION

9.1 Notwithstanding the term of this Agreement as set forth in Section 2.1 hereof, this Agreement shall be terminated upon the occurrence of any one of the following events:

(a) the death of the EMPLOYEE;

(b) the EMPLOYEE becoming bankrupt or making an assignment for the benefit of creditors in general;

(c) thirty (30) days written notice by the EMPLOYEE of his intention to terminate this Agreement;

(d) thirty (30) days written notice by the CORPORATION of its intention to terminate this Agreement and in conjunction with Section 9.3 below;

(e) incapacity due to illness or injury to the EMPLOYEE, such that in the opinion of an independent medical expert acceptable to the EMPLOYEE (or his legal personal representative) and the CORPORATION, which will keep the EMPLOYEE from his duties for a period longer than six (6) consecutive months;

(f) at any time by the CORPORATION, without notice, for "**Just Cause**"("**Just Cause**" will include just cause for dismissal at common law in addition to the conviction of the EMPLOYEE for a indictable criminal offense or the breach by the EMPLOYEE of any of the material covenants or terms of this Agreement).

9.2 In the event this Agreement is terminated in accordance with the provisions of subsections 9.1(a), (b), (c), (e) and (f) hereto the EMPLOYEE shall not be entitled to additional remuneration hereunder from and after the "**Termination Date**" ("**Termination Date**" means the last day the EMPLOYEE is actively performing his duties at work, regardless of the reason for termination.)

9.3 If the CORPORATION terminates this Agreement in accordance with 9.1(d) hereof,the parties agree that the CORPORATION shall pay to the EMPLOYEE an amount of severance calculated in accordance with the following, and that such amount shall constitute full and final settlement of any amounts owing to the EMPLOYEE as a result of such termination:

(a) the equivalent of six times his then current monthly salary, if terminated prior to the first anniversary of the date hereof; or

(b) the equivalent of twelve times his then current monthly salary, if terminated on or after the first anniversary of the date hereof.

(c) It is understood and agreed that the payments referred to in this Section 9.3 include the minimum statutory pay in lieu of notice prescribed by the Alberta *Employment Standards Code*, as amended.

It is further understood that the EMPLOYEE will sign a Release and Confidentiality Agreement similar to that attached as Schedule "A" prior to receiving any amounts owing which exceed the minimum entitlements in accordance with the *Employment Standards Code* (Alberta), as amended, and the EMPLOYEE will provide all required resignations of any positions he holds in the CORPORATION.

ARTICLE 10 - NON COMPETITION & NON-SOLICITATION

10.1 The EMPLOYEE covenants and agrees with the CORPORATION that during the term hereof and for a period of two (2) years thereafter, he will not, either individually or in partnership or jointly or in conjunction with any person, association or syndicate, as principal, agent, shareholder, director, officer, employee or in any other manner whatsoever carry on or be engaged in or be concerned with or interested in or advise, lend money to, guarantee the debts or obligations of or permit his name or any part thereof to be used or employed by any person or persons, including, without limitation, any individual, firm, association, syndication, company, corporation, or other business enterprise, engaged in or concerned with or interested in any business or any part thereof presently carried on by the CORPORATION with respect to its business of any other business at any time during the term hereof carried on by the CORPORATION, except with written consent of the CORPORATION, which consent will not be reasonably withheld.

10.2 During the period identified in Section 10.1, the EMPLOYEE shall not solicit, engage in, assist or have an interest in or be connected with any person, firm or corporation soliciting any customer known or ought to be known to the EMPLOYEE to be a customer or business associate of the CORPORATION.

10.3 During the period identified in Section 10.1, the EMPLOYEE shall not induce, entice or attempt to obtain the withdrawal from the CORPORATION of any employee, consultant, contract researcher or management personnel either before or after the termination of this Agreement.

10.4 If the CORPORATION ceases to carry on business for a continuous period of six (6) months or more, then the provisions of Article 6 and Article 10 hereof shall be null and void and shall cease to have any force and effect after the expiration of the aforesaid period of time.

10.5 The EMPLOYEE confirms that the obligations in Sections 10.1, 10.2 and 10.3 of this Agreement are reasonably necessary for the protection of the CORPORATION and its shareholders and, given the EMPLOYEE's knowledge and experience, will not prevent the EMPLOYEE from being gainfully employed if the EMPLOYEE's employment with the CORPORATION ends.

ARTICLE 11- CHANGE OF CONTROL

11.1 In the event that any third party (which third party has a market capitalization of greater than Cdn.$200,000,000 or has an average daily trading volume of greater than $250,000 (based on the 30 days preceding the date of merger or acquisition and excluding any unusual block trades)) acquires greater than fifty (50%) of the outstanding common shares of the CORPORATION and, within thirty (30) days of such acquisition, the EMPLOYEE'S employment with the CORPORATION is terminated by the CORPORATION or the EMPLOYEE, then the EMPLOYEE shall be entitled to a cash payment equal to 12 times his then current monthly salary (less any payments received by or owing to the EMPLOYEE pursuant to Section 9.3 hereof).

ARTICLE 12 – INDEMNITY

12.1 The CORPORATION shall indemnify and save harmless the EMPLOYEE from and against any personal liability which he incurs in the performance of his employment duties on behalf of the CORPORATION, with the exception of the following:

(a) any liability arising from the EMPLOYEE's gross negligence or fraud or other acts of willful misfeasance; and

(b) any liability which the CORPORATION is prohibited from assuming by law.

ARTICLE 13- NOTICES

13.1 All notices required or allowed to be given under this Agreement shall be made either personally or by mailing same by prepaid registered post, addressed as hereinafter set forth or to such other address as may be designated from time to time by such party in writing, and any notice mailed as aforesaid shall be deemed to have been received by the addresses thereof on the fifth business day following the day of mailing:

If to the CORPORATION**:**

XORTX Pharma Corp.
29 Aspen Park Meadows S.W.
Calgary, Alberta T3H 5Z7

If to the EMPLOYEE:

29 Aspen Park Meadows S.W.
Calgary, Alberta T3H 5Z7

Any party may, from time to time, change its address for service hereunder on written notice to the other party. Any notice may be served by hand delivery or by mailing same by prepaid, registered post, in a properly addressed envelope, addressed to the party to whom the notice is to be given at its address for service hereunder.

ARTICLE 14 - SEVERABILITY

14.1 Each provision of this Agreement is declared to constitute a separate and distinct covenant and to be severable from all such other separate and distinct covenants. Without limiting and foregoing, each provision contained in Article 6 and Article 10 hereof, are declared to-constitute separate and distinct covenants in respect of each capacity and each activity specified in Articles 6 and 10, and to be severable from all other such separate and distinct covenants. If any of the capacities, activities or periods specified in Articles 6 and 10, are considered by a court of as being unreasonable, the parties hereto agree that the said court will have authority to limit such capacities, activities, periods or areas to such capacities, activities, periods of areas as the court deems proper in the circumstances.

14.2 If any covenant or provision herein is determined to be void or unenforceable in whole or in part, it will not be deemed to affect or impair the enforceability or validity of any other covenant or provision of the Agreement or any part thereof.

ARTICLE 15 - RELIEF

15.l The parties to this Agreement recognise that a breach by the EMPLOYEE of any of the covenants herein contained would result in damages to the CORPORATION and the CORPORATION could not adequately be compensated for such damages by monetary award. Accordingly, the EMPLOYEE agrees that in the event of any such breach, in addition to all other remedies available to the CORPORATION at law or in equity, the CORPORATION will be entitled as a matter of right to apply to a court of competent equitable jurisdiction of such relief by way of restraining order, injunction, decree or otherwise, as may be appropriate to ensure compliance with the provisions of this Agreement.

ARTICLE 16 - WAIVER

16.1 The parties agree that all restrictions in this Agreement are necessary and fundamental to the protection of the CORPORATION and are reasonable and valid, and all defences to the strict enforcement thereof by the CORPORATION are hereby waived by the EMPLOYEE.

ARTICLE 17 - GENERAL

17.1 The parties hereto agree that they have expressed herein their entire understanding and agreement concerning the subject matter of this Agreement and it is expressly agreed that no implied covenant, condition, term or reservation or prior representation or warranty shall be read into this Agreement relating to or the subject matter hereof or any matter or operation provided for herein.

17.2 The provisions of this Agreement will enure to the benefit of and be binding upon the heirs, executors, administrators and legal personal representatives of the EMPLOYEE and the successors and assigns of the CORPORATION, respectively.

17.3 Wherever the singular or masculine or neuter is used in this Agreement, the same shall be construed as meaning the plural or feminine or a body politic or corporate and vice versa where the context of the parties hereto so require.

17.4 Time is of the essence hereof.

17.5 This Agreement shall be construed and interpreted in accordance with the laws of the Province of Alberta and Canada and each of the parties hereto hereby irrevocably attorns to the jurisdiction of the Courts of such province.

IN WITNESS WHEREOF the parties acknowledge and agree that they have read and understand the terms of this Agreement, and that they have had an opportunity to seek independent legal advice prior to entering into this Agreement, and that they have executed this Agreement with full force and effect from the date first written above.

XORTX PHARMA CORP.

Per: 

Bruce Rowlands, Director

Per: _____

Alan Moore, Director

SIGNED, SEALED AND DELIVERED
in the presence of

_____

Witness

_____

ALLEN DAVIDOFF

ARTICLE 16 -WAIVER

16.1 The parties agree that all restrictions in this Agreement are necessary and fundamental to the protection of the CORPORATION and are reasonable and valid, and all defences to the strict enforcement thereof by the CORPORATION are hereby waived by the EMPLOYEE.

ARTICLE 17 - GENERAL

17.1 The parties hereto agree that they have expressed herein their entire understanding and agreement concerning the subject matter of this Agreement and it is expressly agreed that no implied covenant, condition, term or reservation or prior representation or warranty shall be read into this Agreement relating to or the subject matter hereof or any matter or operation provided for herein.

17.2 The provisions of this Agreement will enure to the benefit of and be binding upon the heirs, executors, administrators and legal personal representatives of the EMPLOYEE and the successors and assigns of the CORPORATION, respectively.

17.3 Wherever the singular or masculine or neuter is used in this Agreement, the same shall be construed as meaning the plural or feminine or a body politic or corporate and vice versa where the context of the parties hereto so require.

17.4 Time is of the essence hereof.

17.5 This Agreement shall be construed and interpreted in accordance with the laws of the Province of Alberta and Canada and each of the parties hereto hereby irrevocably attorns to the jurisdiction of the Courts of such province.

IN WITNESS WHEREOF the parties acknowledge and agree that they have read and understand the terms of this Agreement, and that they have had an opportunity to seek independent legal advice prior to entering into this Agreement, and that they have executed this Agreement with full force and effect from the date first written above.

XORTX PHARMA CORP.

Per: 
Bruce Rowlands, Director


Per: Alan Moore, Director

SIGNED, SEALED AND DELIVERED
in the presence of

Witness

ALLEN DAVIDOFF

Exhibit 10.14

WARRANT AGENCY AGREEMENT

WARRANT AGENCY AGREEMENT, dated as of August __, 2021 ("Agreement"), between XORTX Therapeutics Inc., a British Columbia corporation (the "Company"), Continental Stock Transfer & Trust Company, a New York corporation (collectively as "Warrant Agent").

W I T N E S S E T H

WHEREAS, pursuant to the terms of that certain Underwriting Agreement, dated August __, 2021, by and among the Company and A.G.P./Alliance Global Partners, as representatives of the underwriters set forth therein (the "Underwriters"), the Company is engaged in a public offering (the "Offering") of up to _____ common shares, no par value (the "Shares"), pre-funded warrants (the "Pre-Funded Warrants") to purchase up to _____ common shares (the "Pre-Funded Warrant Shares") and common share purchase warrants (the "Common Share Purchase Warrants") to purchase up to _____ common shares (the "Common Share Purchase Warrant Shares"); and furthermore, the Company issued warrants to the Underwriters (the "Underwriter Warrants, together with the with the Pre-Funded Warrants and the Common Share Purchase Warrants, the "Warrants") to purchase up to _____ common shares (the "Underwriter Warrant Shares", together with the Common Share Purchase Warrant Shares and the Pre-Funded Warrant Shares, the "Warrant Shares"), including Shares and Warrants issuable pursuant to the Underwriters' over-allotment option;

WHEREAS, the Company has filed with the Securities and Exchange Commission a Registration Statement on Form F-1, as amended (File No. 333-258741) (the "Registration Statement"), for the registration, under the Securities Act of 1933, as amended, of the Shares, the Warrants and the Warrant Shares; and

WHEREAS, the Company wishes the Warrant Agent to act on behalf of the Company, and the Warrant Agent is willing so to act, in connection with the issuance, registration, transfer, exchange, exercise and replacement of the Warrants and, in the Warrant Agent's capacity as the Company's transfer agent, the delivery of the Warrant Shares (as defined below).

NOW, THEREFORE, in consideration of the premises and the mutual agreements herein set forth, the parties hereby agree as follows:

Section 1. Certain Definitions. For purposes of this Agreement, the following terms have the meanings indicated:

(a) "Business Day" means any day except any Saturday, any Sunday, any day which is a federal legal holiday in the United States or any day on which the New York Stock Exchange is authorized or required by law or other governmental action to close.

(b) "Close of Business" on any given date means 5:00 p.m., New York City time, on such date; provided, however, that if such date is not a Business Day it means 5:00 p.m., New York City time, on the next succeeding Business Day.

(c) "Person" means an individual, corporation, association, partnership, limited liability company, joint venture, trust, unincorporated organization, government or political subdivision thereof or governmental agency or other entity.

(d) "Warrant Certificate" means a certificate issued to a Holder, representing a Warrant to acquire such aggregate number of Warrant Shares as is indicated therein.

All other capitalized terms used but not otherwise defined herein shall have the meaning ascribed to such terms in the Warrants.

Section 2. Appointment of Warrant Agent. The Company hereby appoints the Warrant Agent to act as agent for the Company in accordance with the terms and conditions hereof, and the Warrant Agent hereby accepts such appointment. The Company may from time to time appoint a co-Warrant Agent as it may, in its sole discretion, deem necessary or desirable. The Warrant Agent shall have no duty to supervise, and will in no event be liable for the acts or omissions of, any co-Warrant Agent.

Section 3. Global Warrants.

(a) The Warrants shall be issuable in book entry form (each, a "Global Warrant"). All of the Warrants shall initially be represented by (x) one or more Global Warrants deposited with the Warrant Agent for the Common Share Purchase Warrants (y) one or more Global Warrants deposited with the Warrant Agent for the Pre-Funded Warrants (z) one or more Global Warrants deposited with the Warrant Agent for the Underwriter Warrants, in each case, registered in the name of Cede & Co., a nominee of The Depository Trust Company (the "Depositary"), or as otherwise directed by the Depositary. Ownership of beneficial interests in the Warrants shall be shown on, and the transfer of such ownership shall be effected through, records maintained by (i) the Depositary or its nominee for each Global Warrant or (ii) institutions that have accounts with the Depositary.

(b) If the Depositary subsequently ceases to make its book-entry settlement system available for the Warrants, the Company may instruct the Warrant Agent regarding other arrangements for book-entry settlement. In the event that the Warrants are not eligible for, or it is no longer necessary to have the Warrants available in, book-entry form, the Warrant Agent shall provide written instructions to the Depositary to deliver to the Warrant Agent for cancellation each Global Warrant, and the Company shall instruct the Warrant Agent to deliver to each Holder a Warrant Certificate.

(c) A Holder has the right to elect at any time or from time to time a Warrant Exchange (as defined below) pursuant to a Warrant Certificate Request Notice (as defined below). Upon written notice by a Holder to their broker (the "Broker") for the exchange of some or all of such Holder's Global Warrants for a Warrant Certificate evidencing the same number of Warrants, which request shall be in the form attached hereto as Annex A (for the Common Share Purchase Warrants), Annex B (for the Pre-Funded Warrants) and Annex C (for the Underwriter Warrants) (each, a "Warrant Certificate Request Notice" and the date of delivery of such Warrant Certificate Request Notice by the Holder, each, a "Warrant Certificate Request Notice Date" and the deemed surrender upon delivery by the Holder of a number of Global Warrants for the same number of Warrants evidenced by a Warrant Certificate, each, a " Warrant Exchange"), the Warrant Agent upon instructions from the Broker or Depository Trust Company ("DTC") acting on behalf of the Broker shall promptly effect the Warrant Exchange and shall promptly issue and deliver to the Holder a Warrant Certificate for such number of Warrants in the name set forth in the Warrant Certificate Request Notice. Such Warrant Certificate shall retain the original Issue Date of the Warrants but will have a date of transfer corresponding to the date of the electronic transfer from the Broker or DTC and shall be manually executed by an authorized signatory of the Company. In connection with a Warrant Exchange, the Warrant Agent will deliver the Warrant Certificate to the Holder within seven (7) Business Days of the Warrant Certificate Request Notice from the Broker or DTC pursuant to the delivery instructions in the Warrant Certificate Request Notice ("Warrant Certificate Delivery Date"). If the Company fails for any reason to deliver to the Holder the Warrant Certificate subject to the Warrant Certificate Request Notice by the Warrant Certificate Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each $1,000 of Warrant Shares evidenced by such Warrant Certificate (based on the VWAP (as defined in the Warrant) of the Common Stock on the Warrant Certificate Request Notice Date), $10 per Business Day (increasing to $20 per Business Day on the fifth Business Day after such liquidated damages begin to accrue) for each Business Day after such Warrant Certificate Delivery Date until such Warrant Certificate is delivered or, prior to delivery of such Warrant Certificate, the Holder rescinds such Warrant Exchange. The Company covenants and agrees that, upon the date of delivery of the Warrant Certificate Request Notice, the Holder shall be deemed to be the holder of the Warrant Certificate and, notwithstanding anything to the contrary set forth herein, the Warrant Certificate shall be deemed for all purposes to contain all of the terms and conditions of the Warrants evidenced by such Warrant Certificate and the terms of this Agreement, other than Section 3 (c), which shall not apply to the Warrants evidenced by a Warrant Certificate. In the event a beneficial owner requests a Warrant Exchange, upon issuance of the paper Warrant Certificate, the Company shall act as warrant agent and the terms of the paper Warrant Certificate so issued shall exclusively govern in respect thereof. A party requesting transfer of Warrants must provide any evidence of authority that may be required by the Warrant Agent, including but not limited to, a signature guarantee from an eligible guarantor institution participating in a signature guarantee program approved by the Securities Transfer Association.

Section 4. Form of Warrant. The Warrants, together with the form of election to purchase Common Stock (the "Exercise Notice") and the form of assignment to be printed on the reverse thereof, whether a Warrant Certificate or a Global Warrant, shall be substantially in the form of Exhibit 1 (for the Common Share Purchase Warrants) attached hereto, Exhibit 2 (for the Pre-Funded Warrants) attached hereto, and Exhibit 3 for the (Underwriter Warrants).

Section 5. Countersignature and Registration. The Warrants shall be executed on behalf of the Company by its Chief Executive Officer or Chief Financial Officer, either manually or by facsimile signature, and have affixed thereto the Company's seal or a facsimile thereof which shall be attested by the Secretary or an Assistant Secretary of the Company, either manually or by facsimile signature. The Warrants shall be countersigned by the Warrant Agent either manually or by facsimile signature and shall not be valid for any purpose unless so countersigned. In case any officer of the Company who shall have signed a Warrant shall cease to be such officer of the Company before countersignature by the Warrant Agent and issuance and delivery by the Company, such Warrant, nevertheless, may be countersigned by the Warrant Agent, issued and delivered with the same force and effect as though the person who signed such Warrant had not ceased to be such officer of the Company; and any Warrant may be signed on behalf of the Company by any person who, at the actual date of the execution of such Warrant, shall be a proper officer of the Company to sign such Warrant, although at the date of the execution of this Warrant Agreement any such person was not such an officer.

The Warrant Agent will keep or cause to be kept, at one of its offices, or at the office of one of its agents, books for registration and transfer of the Warrant Certificates issued hereunder. Such books shall show the names and addresses of the respective Holders of the Warrant Certificates, the number of warrants evidenced on the face of each of such Warrant Certificate and the date of each of such Warrant Certificate. The Warrant Agent will create a special account for the issuance of Warrant Certificates.

Section 6. Transfer, Split Up, Combination and Exchange of Warrant Certificates; Mutilated, Destroyed, Lost or Stolen Warrant Certificates Subject to the provisions of the Warrant and the last sentence of this first paragraph of Section 6 and subject to applicable law, rules or regulations, or any "stop transfer" instructions the Company may give to the Warrant Agent, at any time after the closing date of the Offering, and at or prior to the Close of Business on the Termination Date, any Warrant Certificate or Warrant Certificates or Global Warrant or Global Warrants may be transferred, split up, combined or exchanged for another Warrant Certificate or Warrant Certificates or Global Warrant or Global Warrants, entitling the Holder to purchase a like number of common shares as the Warrant Certificate or Warrant Certificates or Global Warrant or Global Warrants surrendered then entitled such Holder to purchase. Any Holder desiring to transfer, split up, combine or exchange any Warrant Certificate or Global Warrant shall make such request in writing delivered to the Warrant Agent, and shall surrender the Warrant Certificate or Warrant Certificates to be transferred, split up, combined or exchanged at the principal office of the Warrant Agent, provided that no such surrender is applicable to the Holder of a Global Warrant. Any requested transfer of Warrants, whether a Global Warrant or a Warrant Certificate, shall be accompanied by reasonable evidence of authority of the party making such request that may be required by the Warrant Agent. Thereupon the Warrant Agent shall, subject to the last sentence of this first paragraph of Section 6, countersign and deliver to the Person entitled thereto any Warrant Certificate or Global Warrant, as the case may be, as so requested. The Company may require payment from the Holder of a sum sufficient to cover any tax or governmental charge that may be imposed in connection with any transfer, split up, combination or exchange of Warrants. The Company shall compensate the Warrant Agent per the fee schedule mutually agreed upon by the parties hereto and provided separately on the date hereof.

Upon receipt by the Warrant Agent of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of a Warrant Certificate, which evidence shall include an affidavit of loss and an open penalty surety bond satisfactory to it, or in the case of mutilated certificates, the certificate or portion thereof remaining, and, in case of loss, theft or destruction, of indemnity in customary form and amount, and satisfaction of any other reasonable requirements established by Section 8-405 of the Uniform Commercial Code as in effect in the State of Delaware, and reimbursement to the Company and the Warrant Agent of all reasonable expenses incidental thereto, and upon surrender to the Warrant Agent and cancellation of the Warrant Certificate if mutilated, the Warrant Agent will make and deliver a new Warrant Certificate of like tenor for delivery to the Holder in lieu of the Warrant Certificate so lost, stolen, destroyed or mutilated.

Section 7. Exercise of Warrants; Exercise Price; Termination Date.

(a) The Warrants shall be exercisable commencing on the Initial Exercise Date. The Warrants shall cease to be exercisable and shall terminate and become void, and all rights thereunder and under this Agreement shall cease, at or prior to the Close of Business on the Termination Date. Subject to the foregoing and to Section 7(b) below, the Holder of a Warrant may exercise the Warrant in whole or in part upon providing the items required by Section 7(c) below to the Warrant Agent at the principal office of the Warrant Agent or to the office of one of its agents as may be designated by the Warrant Agent from time to time. In the case of the Holder of a Global Warrant, the Holder shall deliver the executed Exercise Notice and payment of the applicable unpaid Exercise Price pursuant to Section 2(a) of the Warrant. Notwithstanding any other provision in this Agreement, a holder whose interest in a Global Warrant is a beneficial interest in a Global Warrant held in book-entry form through the Depositary (or another established clearing corporation performing similar functions), shall effect exercises by delivering to the Depositary (or such other clearing corporation, as applicable) the appropriate instruction form for exercise, complying with the procedures to effect exercise that are required by the Depositary (or such other clearing corporation, as applicable). The Company acknowledges that the bank accounts maintained by the Warrant Agent in connection with the services provided under this Agreement will be in its name and that the Warrant Agent may receive investment earnings in connection with the investment at Warrant Agent risk and for its benefit of funds held in those accounts from time to time. Neither the Company nor the Holders will receive interest on any deposits or any Exercise Price.

(b) Upon receipt of an Exercise Notice for a cashless exercise pursuant to Section 2(c) of a Warrant (each, a "Cashless Exercise"), the Company will promptly calculate and transmit to the Warrant Agent the number of Warrant Shares, the rate of exchange and the round up or round down of any Warrant Shares issuable in connection with such Cashless Exercise and deliver a copy of the Exercise Notice to the Warrant Agent, which shall issue such number of Warrant Shares in connection with such Cashless Exercise.

(c) Upon the Warrant Agent's receipt, at or prior to the Close of Business on the Termination Date set forth in a Warrant, of the executed Exercise Notice, accompanied by payment of the applicable unpaid Exercise Price pursuant to Section 2(a) of the Warrant, the shares to be purchased (other than in the case of a Cashless Exercise), an amount equal to any applicable tax, governmental charge or expense reimbursement referred to in Section 6 by personal bank check payable to the order of the Company and, in the case of an exercise of a Warrant in the form of a Warrant Certificate , the Warrant Certificate, the Warrant Agent shall cause the Warrant Shares underlying such Warrant to be delivered to or upon the order of the Holder of such Warrant, registered in such name or names as may be designated by such Holder, no later than the Warrant Certificate Delivery Date. If the Company is then a participant in the deposit/withdrawal at custodian ("DWAC") system of the Depositary and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by Holder or (B) the Warrant is being exercised via Cashless Exercise, then the certificates for Warrant Shares shall be transmitted by the Warrant Agent to the Holder by crediting the account of the Holder's broker with the Depositary through its DWAC system. For the avoidance of doubt, if the Company becomes obligated to pay any amounts to any Holders pursuant to Section 2 (d)(i) or 2(d)(iv) of the Warrant, such obligation shall be solely that of the Company and not that of the Warrant Agent. Notwithstanding anything else to the contrary in this Agreement, except in the case of a Cashless Exercise, if any Holder fails to duly deliver payment to the Warrant Agent of an amount equal to the aggregate unpaid Exercise Price of the Warrant Shares to be purchased upon exercise of such Holder's Warrant as set forth in Section 7(a) hereof, the Warrant Agent will not be obligated to deliver certificates representing any such Warrant Shares (via DWAC or otherwise) until following receipt of such payment, and the applicable Warrant Share Delivery Date shall be deemed extended by one day for each day (or part thereof) until such payment is delivered to the Warrant Agent.

All funds received by the Warrant Agent pursuant to this Agreement that are to be distributed or applied by the Warrant Agent in accordance with the terms of this Agreement (the "Funds") shall be delivered to the Warrant Agent. Once received by the Warrant Agent, the Funds shall be held by the Warrant Agent as agent for Company. Until paid or distributed in accordance with this Agreement, the Funds shall be deposited in one or more bank accounts to be maintained by the Warrant Agent in its name as agent for Company. Until paid pursuant to this Agreement, the Warrant Agent may hold or invest the Funds through such accounts in: (i) bank accounts, short term certificates of deposit, bank repurchase agreements, and disbursement accounts with commercial banks with Tier 1 capital exceeding $1 billion or with an average rating above investment grade by S&P (LT Local Issuer Credit Rating), Moody's (Long Term Rating) and Fitch Ratings, Inc. (LT Issuer Default Rating) (each as reported by Bloomberg Finance L.P.), (ii) Cash Management sweeps to AAA Fixed NAV money market funds that comply with Rule 2a-7 of the Investment Company Act of 1940, (iii) funds backed by obligations of, or guaranteed by, the United States of America, municipal securities, or (iv) debt or commercial paper obligations rated A-1 or P-1 or better by Standard & Poor's Corporation ("S&P") or Moody's Investors Service, Inc. ("Moody's"), respectively.

The Warrant Agent will only draw upon the Funds in such account(s) as required from time to time in order to make the payments for the Shares and any applicable tax withholding payments. The Warrant Agent shall have no responsibility or liability for any diminution of the Funds that may result from any deposit or investment made by the Warrant Agent in accordance with this Section, including any losses resulting from a default by any bank, financial institution or other third party. The Warrant Agent may from time to time receive interest, dividends or other earnings in connection with such deposits. The Warrant Agent shall not be obligated to pay such interest, dividends or earnings to Company, any holder or any other party including the Company.

The Warrant Agent is acting as agent hereunder and is not a debtor of Company in respect of the Funds.

(d) In case the Holder of any Warrant Certificate exercises fewer than all Warrants evidenced thereby and surrenders such Warrant Certificate in connection with such partial exercise, a new Warrant Certificate evidencing the number of Warrant Shares equivalent to the number of Warrant Shares remaining unexercised may be issued by the Warrant Agent to the Holder of such Warrant Certificate or to his duly authorized assigns in accordance with Section 2(d)(ii) of the Warrant, subject to the provisions of Section 6 hereof.

(e) In the event of a cash exercise, the company hereby instructs CPU to record cost basis for newly issued shares as follows:

(f) In the event of a cashless exercise: issuer shall provide cost basis for shares issued pursuant to a cashless exercise at the time the Company provides the Cashless Exercise Ratio to CPU pursuant to Section 7 hereof.

Section 8. Cancellation and Destruction of Warrant Certificates. All Warrant Certificates surrendered for the purpose of exercise, transfer, split up, combination or exchange shall, if surrendered to the Company or to any of its agents, be delivered to the Warrant Agent for cancellation or in canceled form, or, if surrendered to the Warrant Agent, shall be canceled by it, and no Warrant Certificates shall be issued in lieu thereof except as expressly permitted by any of the provisions of this Agreement. The Company shall deliver to the Warrant Agent for cancellation and retirement, and the Warrant Agent shall so cancel and retire, any other Warrant Certificate purchased or acquired by the Company otherwise than upon the exercise thereof. The Warrant Agent will become the sole recordkeeping agent for the Warrants, and shall maintain such records in accordance with its standard practices and applicable law. Upon issuing Shares for the exercise of the such Warrant, the certificates representing such Warrants will be canceled by Agent

Section 9. Certain Representations; Reservation and Availability of Common shares or Cash

(a) This Agreement has been duly authorized, executed and delivered by the Company and, assuming due authorization, execution and delivery hereof by the Warrant Agent, constitutes a valid and legally binding obligation of the Company enforceable against the Company in accordance with its terms, and the Warrants have been duly authorized, executed and issued by the Company and, assuming due authentication thereof by the Warrant Agent pursuant hereto and payment therefor by the Holders as provided in the Registration Statement, constitute valid and legally binding obligations of the Company enforceable against the Company in accordance with their terms and entitled to the benefits thereof; in each case except as enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium and other similar laws relating to or affecting creditors' rights generally or by general equitable principles (regardless of whether such enforceability is considered in a proceeding in equity or at law).

(b) As of the date hereof and prior to the Offering, the authorized capital stock of the Company consists of an unlimited number of common shares, of which [_____] common shares are issued and outstanding. [_____] common shares are reserved for issuance upon exercise of the Warrants. Except as disclosed in the Registration Statement, there are no other outstanding obligations, warrants, options or other rights to subscribe for or purchase from the Company any class of capital stock of the Company.

(c) The Company covenants and agrees that it will cause to be reserved and kept available out of its authorized and unissued common shares or its authorized and issued common shares held in its treasury, free from preemptive rights, the number of common shares that will be sufficient to permit the exercise in full of all outstanding Warrants.

(d) The Warrant Agent will create a special account for the issuance of Common Stock upon the exercise of Warrants. Company shall provide an opinion of counsel prior to the Effective Time to set up the reserve of the Warrants and Warrant Shares. The opinion shall state that all the Warrants and Warrant Shares, or the transactions in which they are being issued, as applicable, are:

(i) Registered, or subject to a valid exemption from registration, under the Securities Act of 1933 (the "**1933 Act**"), as amended, and all appropriate state securities law filings have been made with respect to the New Shares, or alternatively, that the New Shares are "covered securities" under Section 18 of the 1933 Act; and

(i) Validly issued, fully paid and non-assessable.

(e) The Company further covenants and agrees that it will pay when due and payable any and all federal and state transfer taxes and charges which may be payable in respect of the original issuance or delivery of the Warrant Certificates or certificates evidencing common shares upon exercise of the Warrants. The Company shall not, however, be required to pay any tax or governmental charge which may be payable in respect of any transfer involved in the transfer or delivery of Warrant Certificates or the issuance or delivery of certificates for common shares in a name other than that of the Holder of the Warrant Certificate evidencing Warrants surrendered for exercise or to issue or deliver any certificate for common shares upon the exercise of any Warrants until any such tax or governmental charge shall have been paid (any such tax or governmental charge being payable by the Holder of such Warrant Certificate at the time of surrender).

Section 10. Common Share Record Date. Each Holder shall be deemed to have become the holder of record for the Warrant Shares pursuant to Section 2(d)(i) of the Warrants.

Section 11. Adjustment of Exercise Price, Number of Common shares or Number of the Company Warrants. The applicable Exercise Price, the number of shares covered by each Warrant and the number of Warrants outstanding are subject to adjustment from time to time as provided in Section 3 of the Warrant. In the event that at any time, as a result of an adjustment made pursuant to Section 3 of the Warrant, the Holder of any Warrant thereafter exercised shall become entitled to receive any shares of capital stock of the Company other than common shares, thereafter the number of such other shares so receivable upon exercise of any Warrant shall be subject to adjustment from time to time in a manner and on terms as nearly equivalent as practicable to the provisions with respect to the shares contained in Section 3 of the Warrant, and the provisions of Sections 7, 9 and 13 of this Agreement with respect to the common shares shall apply on like terms to any such other shares. All Warrants originally issued by the Company subsequent to any adjustment made to the applicable Exercise Price pursuant to the Warrant shall evidence the right to purchase, at the adjusted Exercise Price, the number of common shares purchasable from time to time hereunder upon exercise of the Warrants, all subject to further adjustment as provided herein.

Section 12. Certification of Adjusted Exercise Price or Number of Common shares. Whenever the Exercise Price or the number of common shares issuable upon the exercise of each Warrant is adjusted as provided in Section 11 or 13, the Company shall (a) promptly prepare a certificate setting forth the Exercise Price of each Common Warrant and the unpaid portion of the Exercise Price of each Pre-Funded Warrant, in each case, as so adjusted, and a brief statement of the facts accounting for such adjustment, (b) promptly file with the Warrant Agent and with each transfer agent for the common shares a copy of such certificate and (c) instruct the Warrant Agent to send a brief summary thereof to each Holder of a registered Warrant.

Section 13. Fractional Common shares.

(a) The Company shall not issue fractions of Warrants or distribute a Global Warrant or Warrant Certificates that evidence fractional Warrants. Whenever any fractional Warrant would otherwise be required to be issued or distributed, the actual issuance or distribution shall reflect a rounding of such fraction either up or down to the nearest whole Warrant.

(b) The Company shall not issue fractions of common shares upon exercise of Warrants or distribute stock certificates that evidence fractional common shares. Whenever any fraction of a common share would otherwise be required to be issued or distributed, the actual issuance or distribution in respect thereof shall be made in accordance with Section 2(d)(v) of the Warrant.

Section 14. Conditions of the Warrant Agent's Obligations. The Warrant Agent accepts its obligations herein set forth upon the terms and conditions hereof, including the following to all of which the Company agrees and to all of which the rights hereunder of the Holders from time to time of the Warrant shall be subject:

(a) Compensation. The Company agrees promptly to pay the Warrant Agent the compensation detailed on Exhibit 2 hereto for all services rendered by the Warrant Agent and to reimburse the Warrant Agent for reasonable out-of-pocket expenses (including reasonable counsel fees) incurred in connection with the services rendered hereunder by the Warrant Agent.

(b) Agent for the Company. In acting under this Warrant Agreement and in connection with the Warrant Certificates, the Warrant Agent is acting solely as agent of the Company and does not assume any obligations or relationship of agency or trust for or with any of the Holders of Warrant Certificates or beneficial owners of Warrants.

(c) Counsel. The Warrant Agent may consult with counsel satisfactory to it, which may include counsel for the Company, and the written advice of such counsel shall be full and complete authorization and protection in respect of any action taken, suffered or omitted by it hereunder in good faith and in accordance with the advice of such counsel.

(d) Documents. The Warrant Agent shall be protected and shall incur no liability for or in respect of any action taken or omitted by it in reliance upon any Warrant Certificate, notice, direction, consent, certificate, affidavit, statement or other paper or document reasonably believed by it to be genuine and to have been presented or signed by the proper parties.

(e) Certain Transactions. The Warrant Agent, and its officers, directors and employees, may become the owner of, or acquire any interest in, Warrants, with the same rights that it or they would have if it were not the Warrant Agent hereunder, and, to the extent permitted by applicable law, it or they may engage or be interested in any financial or other transaction with the Company and may act on, or as depositary, trustee or agent for, any committee or body of Holders of Warrants or other obligations of the Company as freely as if it were not the Warrant Agent hereunder. Nothing in this Warrant Agreement shall be deemed to prevent the Warrant Agent from acting as trustee under any indenture to which the Company is a party.

(f) No Liability for Invalidity. The Warrant Agent shall have no liability with respect to any invalidity of this Agreement or any of the Warrant Certificates (except as to the Warrant Agent's countersignature thereon).

(g) No Responsibility for Representations. The Warrant Agent shall not be responsible for any of the recitals or representations herein or in the Warrant Certificates (except as to the Warrant Agent's countersignature thereon), all of which are made solely by the Company.

(h) No Implied Obligations. The Warrant Agent shall be obligated to perform only such duties as are herein and in the Warrants specifically set forth and no implied duties or obligations shall be read into this Agreement or the Warrants against the Warrant Agent. The Warrant Agent shall not be under any obligation to take any action hereunder which may tend to involve it in any expense or liability, the payment of which within a reasonable time is not, in its reasonable opinion, assured to it. The Warrant Agent shall not be accountable or under any duty or responsibility for the use by the Company of any of the Warrants authenticated by the Warrant Agent and delivered by it to the Company pursuant to this Agreement or for the application by the Company of the proceeds of the Warrants. The Warrant Agent shall have no duty or responsibility in case of any default by the Company in the performance of its covenants or agreements contained herein or in the Warrants or in the case of the receipt of any written demand from a Holder of a Warrant Certificate with respect to such default, including, without limiting the generality of the foregoing, any duty or responsibility to initiate or attempt to initiate any proceedings at law.

Section 15. Purchase or Consolidation or Change of Name of Warrant Agent. Any corporation into which the Warrant Agent or any successor Warrant Agent may be merged or with which it may be consolidated, or any corporation resulting from any merger or consolidation to which the Warrant Agent or any successor Warrant Agent shall be party, or any corporation succeeding to the corporate trust business of the Warrant Agent or any successor Warrant Agent, shall be the successor to the Warrant Agent under this Agreement without the execution or filing of any paper or any further act on the part of any of the parties hereto, provided that such corporation would be eligible for appointment as a successor Warrant Agent under the provisions of Section 19. In case at the time such successor Warrant Agent shall succeed to the agency created by this Agreement any of the Warrants shall have been countersigned but not delivered, any such successor Warrant Agent may adopt the countersignature of the predecessor Warrant Agent and deliver such Warrants so countersigned; and in case at that time any of the Warrants shall not have been countersigned, any successor Warrant Agent may countersign such Warrants either in the name of the predecessor Warrant Agent or in the name of the successor Warrant Agent; and in all such cases such Warrants shall have the full force provided in the Warrants and in this Agreement.

In case at any time the name of the Warrant Agent shall be changed and at such time any of the Warrants shall have been countersigned but not delivered, the Warrant Agent may adopt the countersignature under its prior name and deliver Warrants so countersigned; and in case at that time any of the Warrants shall not have been countersigned, the Warrant Agent may countersign such Warrants either in its prior name or in its changed name; and in all such cases such Warrants shall have the full force provided in the Warrants and in this Agreement.

Section 16. Duties of Warrant Agent. The Warrant Agent undertakes the duties and obligations imposed by this Agreement upon the following terms and conditions, by all of which the Company, by its acceptance hereof, shall be bound:

(a) The Warrant Agent may consult with legal counsel reasonably acceptable to the Company (who may be legal counsel for the Company), and the opinion of such counsel shall be full and complete authorization and protection to the Warrant Agent as to any action taken or omitted by it in good faith and in accordance with such opinion.

(b) Whenever in the performance of its duties under this Agreement the Warrant Agent shall deem it necessary or desirable that any fact or matter be proved or established by the Company prior to taking or suffering any action hereunder, such fact or matter (unless other evidence in respect thereof be herein specifically prescribed) may be deemed to be conclusively proved and established by a certificate signed by the Chief Executive Officer or Chief Financial Officer of the Company; and such certificate shall be full authentication to the Warrant Agent for any action taken or suffered in good faith by it under the provisions of this Agreement in reliance upon such certificate.

(c) The Warrant Agent shall not be liable for or by reason of any of the statements of fact or recitals contained in this Agreement or in the Warrants (except its countersignature thereof) by the Company or be required to verify the same, but all such statements and recitals are and shall be deemed to have been made by the Company only.

(d) The Warrant Agent shall not be under any responsibility in respect of the validity of this Agreement or the execution and delivery hereof (except the due execution hereof by the Warrant Agent) or in respect of the validity or execution of any Warrant (except its countersignature thereof); nor shall it be responsible for any breach by the Company of any covenant or condition contained in this Agreement or in any Warrant; nor shall it be responsible for the adjustment of any Exercise Price or the making of any change in the number of common shares required under the provisions of Section 11 or 13 or responsible for the manner, method or amount of any such change or the ascertaining of the existence of facts that would require any such adjustment or change (except with respect to the exercise of Warrants evidenced by Warrant Certificates after actual notice of any adjustment of any Exercise Price); nor shall it by any act hereunder be deemed to make any representation or warranty as to the authorization or reservation of any common shares to be issued pursuant to this Agreement or any Warrant or as to whether any common shares will, when issued, be duly authorized, validly issued, fully paid and nonassessable.

(e) Each party hereto agrees that it will perform, execute, acknowledge and deliver or cause to be performed, executed, acknowledged and delivered all such further and other acts, instruments and assurances as may reasonably be required by the other party hereto for the carrying out or performing by any party of the provisions of this Agreement.

(f) The Warrant Agent is hereby authorized to accept instructions with respect to the performance of its duties hereunder from the Chief Executive Officer , Chief Financial Officer or counsel of the Company, and to apply to such officers for advice or instructions in connection with its duties, and it shall not be liable and shall be indemnified and held harmless for any action taken or suffered to be taken by it in good faith in accordance with instructions of any such officer, provided Warrant Agent carries out such instructions without gross negligence, bad faith or willful misconduct.

(g) The Warrant Agent and any shareholder, director, officer or employee of the Warrant Agent may buy, sell or deal in any of the Warrants or other securities of the Company or become pecuniarily interested in any transaction in which the Company may be interested, or contract with or lend money to the Company or otherwise act as fully and freely as though it were not Warrant Agent under this Agreement. Nothing herein shall preclude the Warrant Agent from acting in any other capacity for the Company or for any other legal entity.

(h) The Warrant Agent may execute and exercise any of the rights or powers hereby vested in it or perform any duty hereunder either itself or by or through its attorney or agents, and the Warrant Agent shall not be answerable or accountable for any act, default, neglect or misconduct of any such attorney or agents or for any loss to the Company resulting from any such act, default, neglect or misconduct, provided reasonable care was exercised in the selection and continued employment thereof.

Section 17. Indemnification. The Company covenants and agrees to indemnify and to hold the Warrant Agent harmless against any costs, expenses (including reasonable fees of its legal counsel), losses or damages, which may be paid, incurred or suffered by or to which it may become subject, arising from or out of, directly or indirectly, any claims or liability resulting from its actions as Warrant Agent pursuant hereto; provided, that such covenant and agreement does not extend to, and the Warrant Agent shall not be indemnified with respect to, such costs, expenses, losses and damages incurred or suffered by the Warrant Agent as a result of, or arising out of, its gross negligence, bad faith, or willful misconduct.

From time to time, Company may provide Warrant Agent with instructions concerning the services performed by the Warrant Agent hereunder. In addition, at any time Warrant Agent may apply to any officer of Company for instruction, and may consult with legal counsel for Warrant Agent or Company with respect to any matter arising in connection with the services to be performed by the Warrant Agent under this Agreement. Warrant Agent and its agents and subcontractors shall not be liable and shall be indemnified by Company for any action taken or omitted by Warrant Agent in reliance upon any Company instructions or upon the advice or opinion of such counsel. Warrant Agent shall not be held to have notice of any change of authority of any person, until receipt of written notice thereof from Company.

Section 18. Limitation of Liability. Notwithstanding anything contained herein to the contrary, the Warrant Agent's aggregate liability during any term of this Agreement with respect to, arising from, or arising in connection with this Agreement, or from all Services provided or omitted to be provided under this Agreement, whether in contract, or in tort, or otherwise, is limited to, and shall not exceed, the amounts paid hereunder by the Company to Warrant Agent as fees and charges, but not including reimbursable expenses, during the twelve (12) months immediately preceding the event for which recovery from Warrant Agent is being sought.

Section 19. Change of Warrant Agent. The Warrant Agent may resign and be discharged from its duties under this Agreement upon 30 days' notice in writing sent to the Company. The Company may remove the Warrant Agent or any successor Warrant Agent upon 30 days' notice in writing, sent to the Warrant Agent or successor Warrant Agent, as the case may be, and to each transfer agent of the common shares, and to the Holders of the Warrant Certificates. If the Warrant Agent shall resign or be removed or shall otherwise become incapable of acting, the Company shall appoint a successor to the Warrant Agent. If the Company shall fail to make such appointment within a period of 30 days after such removal or after it has been notified in writing of such resignation or incapacity by the resigning or incapacitated Warrant Agent or by the Holder of a Warrant Certificate (who shall, with such notice, submit his Warrant Certificate for inspection by the Company), then the Holder of any Warrant Certificate may apply to any court of competent jurisdiction for the appointment of a new Warrant Agent. Any successor Warrant Agent, whether appointed by the Company or by such a court, shall be a corporation organized and doing business under the laws of the United States or of a state thereof, in good standing, which is authorized under such laws to exercise corporate trust powers and is subject to supervision or examination by federal or state authority and which has at the time of its appointment as Warrant Agent a combined capital and surplus of at least $50,000,000. After appointment, the successor Warrant Agent shall be vested with the same powers, rights, duties and responsibilities as if it had been originally named as Warrant Agent without further act or deed; but the predecessor Warrant Agent shall deliver and transfer to the successor Warrant Agent any property at the time held by it hereunder, and execute and deliver any further assurance, conveyance, act or deed necessary for the purpose. Not later than the effective date of any such appointment, the Company shall file notice thereof in writing with the predecessor Warrant Agent and each transfer agent of the common shares, and mail a notice thereof in writing to the Holders of the Warrant Certificates. However, failure to give any notice provided for in this Section 19, or any defect therein, shall not affect the legality or validity of the resignation or removal of the Warrant Agent or the appointment of the successor Warrant Agent, as the case may be.

Section 20. Issuance of New Warrants. Notwithstanding any of the provisions of this Agreement or of the Warrants to the contrary, the Company may, at its option, instruct the Warrant Agent to issue a new Global Warrant or Warrant Certificates, if any, evidencing Warrants in such form as may be approved by its Board of Directors to reflect any adjustment or change in the applicable Exercise Price per share and the number or kind or class of shares of stock or other securities or property purchasable under the Global Warrant or Warrant Certificates, if any, made in accordance with the provisions of this Agreement.

Section 21. Notices. Notices or demands authorized by this Agreement to be given or made (i) by the Warrant Agent or by the Holder of any Warrant Certificate to or on the Company, (ii) subject to the provisions of Section 19, by the Company or by the Holder of any Warrant Certificate to or on the Warrant Agent or (iii) by the Company or the Warrant Agent to the Holder of any Warrant Certificate, shall be deemed given (a) on the date delivered, if delivered personally, (b) on the first Business Day following the deposit thereof with Federal Express or another recognized overnight courier, if sent by Federal Express or another recognized overnight courier, (c) on the fourth Business Day following the mailing thereof with postage prepaid, if mailed by registered or certified mail (return receipt requested), and (d) the date of transmission, if such notice or communication is delivered via facsimile or email attachment at or prior to 5:30 p.m. (New York City time) on a Business Day and (e) the next Business Day after the date of transmission, if such notice or communication is delivered via facsimile or email attachment on a day that is not a Business Day or later than 5:30 p.m. (New York City time) on any Business Day, in each case to the parties at the following addresses (or at such other address for a party as shall be specified by like notice):

(a) If to the Company, to:

XORTX Therapeutics Inc.
Suite 4000, 421 – 7th Avenue SW
Calgary, Alberta, Canada T2P 4K9
Attention: Charlotte May, Controller
Email: cmay@xortx.com

With a copy (for informational purposes only) to:
Dorsey & Whitney LLP
1400 Wewatta Street, Suite 400
Denver, CO 80202-5549
Attention: Anthony W. Epps, Esq.
Email: epps.anthony@dorsey.com

(b) If to the Warrant Agent, to:

Continental Stock Transfer & Trust Company
1 State Street, 30 FL
New York, New York 10004
Attention: Compliance Department

For any notice delivered by email to be deemed given or made, such notice must be followed by notice sent by overnight courier service to be delivered on the next business day following such email, unless the recipient of such email has acknowledged via return email receipt of such email.

(c) If to the Holder of any Warrant Certificate, to the address of such Holder as shown on the registry books of the Company. Any notice required to be delivered by the Company to the Holder of any Warrant may be given by the Warrant Agent on behalf of the Company. Notwithstanding any other provision of this Agreement, where this Agreement provides for notice of any event to a Holder of any Warrant Certificate, for a Global Warrant, such notice shall be sufficiently given if given to the Depositary (or its designee) pursuant to the procedures of the Depositary or its designee.

Section 22. Supplements and Amendments.

(a) The Company and the Warrant Agent may from time to time supplement or amend this Agreement without the approval of any Holders of Warrant Certificates in order to cure any ambiguity, to correct or supplement any provision contained herein which may be defective or inconsistent with any other provisions herein, or to make any other provisions with regard to matters or questions arising hereunder which the Company and the Warrant Agent may deem necessary or desirable and which shall not adversely affect the interests of the Holders of the Warrants Certificates in any material respect.

(b) In addition to the foregoing, with the consent of Holders of Warrants, the Company and the Warrant Agent may modify this Agreement for the purpose of adding any provisions to or changing in any manner or eliminating any of the provisions of this Warrant Agreement or modifying in any manner the rights of the Holders of the Warrant Certificates; provided, however, that no modification of the terms (including but not limited to the adjustments described in Section 11) upon which the Warrants are exercisable or reducing the percentage required for consent to modification of this Agreement may be made without the consent of the Holder of each outstanding warrant certificate affected thereby. As a condition precedent to the Warrant Agent's execution of any amendment, the Company shall deliver to the Warrant Agent a certificate from a duly authorized officer of the Company that states that the proposed amendment complies with the terms of this Section 22.

Section 23. Successors. All covenants and provisions of this Agreement by or for the benefit of the Company or the Warrant Agent shall bind and inure to the benefit of their respective successors and assigns hereunder.

Section 24. Confidentiality. The Warrant Agent and the Company agree that all books, records, information and data pertaining to the business of the other party, including *inter alia*, personal, non-public warrant holder information, which are exchanged or received pursuant to the negotiation or the carrying out of this Agreement including the fees for services set forth in the attached schedule shall remain confidential, and shall not be voluntarily disclosed to any other person, except as may be required by law, including, without limitation, pursuant to subpoenas from state or federal government authorities (e.g., in divorce and criminal actions).

Section 25. **Further Assurances**. The Company shall perform, acknowledge and deliver or cause to be performed, acknowledged and delivered all such further and other acts, documents, instruments and assurances as may be reasonably required by the Warrant Agent for the carrying out or performing by the Warrant Agent of the provisions of this Agreement.

Section 26. **Consequential Damages**. Neither party to this Agreement shall be liable to the other party for any consequential, indirect, special or incidental damages under any provisions of this Agreement or for any consequential, indirect, punitive, special or incidental damages arising out of any act or failure to act hereunder even if that party has been advised of or has foreseen the possibility of such damages.

Section 27. **Governing Law; Jurisdiction**. This Agreement shall be governed by the laws of the State of New York, without regard to principles of conflicts of law. The parties hereto irrevocably (i) submit to the non-exclusive jurisdiction of any New York State court sitting in New York City or the United States District Court for the Southern District of New York in any action or proceeding arising out of or relating to this Agreement, (ii) waive, to the fullest extent they may effectively do so, any defense based on inconvenient forum, improper venue or lack of jurisdiction to the maintenance of any such action or proceeding, and (iii) waive all right to trial by jury in any action, proceeding or counterclaim arising out of this Agreement or the transactions contemplated hereby. Agent shall not be required hereunder to comply with the laws or regulations of any country other than the United States of America or any political subdivision thereof. Agent may consult with foreign counsel, at the Company's expense, to resolve any foreign law issues that may arise as a result of the Company or any other party being subject to the laws or regulations of any foreign jurisdiction. Benefits of this Agreement. Nothing in this Agreement shall be construed to give any Person other than the Company, the Holders of Warrant Certificates and the Warrant Agent any legal or equitable right, remedy or claim under this Agreement; but this Agreement shall be for the sole and exclusive benefit of the Company, the Warrant Agent and the Holders of the Warrant Certificates.

Section 28. **Governing Law.** This Agreement and each Warrant issued hereunder shall be governed by, and construed in accordance with, the laws of the State of New York without giving effect to the conflicts of law principles thereof.

Section 29. **Counterparts**. This Agreement may be executed in any number of counterparts and each of such counterparts shall for all purposes be deemed to be an original, and all such counterparts shall together constitute but one and the same instrument.

Section 30. **Captions**. The captions of the sections of this Agreement have been inserted for convenience only and shall not control or affect the meaning or construction of any of the provisions hereof.

Section 31. **Information**. The Company agrees to promptly provide to the Holders of the Warrants any information it provides to all holders of the common shares, except to the extent any such information is publicly available on the EDGAR system (or any successor thereof) of the Securities and Exchange Commission.

Section 32. **Force Majeure. Notwithstanding anything to the contrary contained herein, Warrant Agent shall not be liable for any delays or failures in performance resulting from acts beyond its reasonable control including, without limitation, acts of God, terrorist acts, shortage of supply, breakdowns or malfunctions, interruptions or malfunction of computer facilities, or loss of data due to power failures or mechanical difficulties with information storage or retrieval systems, labor difficulties, war, or civil unrest.**

[Signature page follows]

IN WITNESS WHEREOF, this Agreement has been duly executed by the parties hereto as of the day and year first above written.

XORTX THERAPEUTICS INC.

By: _____
Name:
Title:

CONTINENTAL STOCK TRANSFER & TRUST COMPANY

By: _____
Name:
Title:

Annex A: Form of Common Warrant Certificate Request Notice

WARRANT CERTIFICATE REQUEST NOTICE

To: Continental Stock Transfer & Trust Company, as Warrant Agent for XORTX Therapeutics Inc. (the "Company")

The undersigned Holder of Common Share Purchase Warrants ("Common Share Purchase Warrants") in the form of Global Warrants issued by the Company hereby elects to receive a Warrant Certificate evidencing the Common Share Purchase Warrants held by the Holder as specified below:

1. Name of Holder of Common Share Purchase Warrants in form of Global Warrants: _____

2. Name of Holder in Warrant Certificate (if different from name of Holder of Warrants in form of Global Warrants): _____

3. Number of Common Share Purchase Warrants in name of Holder in form of Global Warrants: _____

4. Number of Common Share Purchase Warrants for which Warrant Certificate shall be issued: _____

5. Number of Common Share Purchase Warrants in name of Holder in form of Global Warrants after issuance of Warrant Certificate, if any: _____

6. Warrant Certificate shall be delivered to the following address:

_____

_____

_____

_____

The undersigned hereby acknowledges and agrees that, in connection with this Warrant Exchange and the issuance of the Warrant Certificate, the Holder is deemed to have surrendered the number of Common Share Purchase Warrants in form of Global Warrants in the name of the Holder equal to the number of Warrants evidenced by the Warrant Certificate.

[SIGNATURE OF HOLDER]

Name of Investing Entity: _____

Signature of Authorized Signatory of Investing Entity: _____

Name of Authorized Signatory: _____

Title of Authorized Signatory: _____

Date: _____

Annex B: Form of Pre-Funded Warrant Certificate Request Notice

WARRANT CERTIFICATE REQUEST NOTICE

To: Continental Stock Transfer & Trust Company, as Warrant Agent for XORTX Therapeutics Inc. (the "Company")

The undersigned Holder of Pre-Funded Warrants ("Pre-Funded Warrants") in the form of Global Warrants issued by the Company hereby elects to receive a Warrant Certificate evidencing the Warrants held by the Holder as specified below:

1. Name of Holder of Pre-Funded Warrants in form of Global Warrants: _____

2. Name of Holder in Warrant Certificate (if different from name of Holder of Pre-Funded Warrants in form of Global Warrants): _____

3. Number of Pre-Funded Warrants in name of Holder in form of Global Warrants: _____

4. Number of Pre-Funded Warrants for which Warrant Certificate shall be issued: _____

5. Number of Pre-Funded Warrants in name of Holder in form of Global Warrants after issuance of Warrant Certificate, if any: _____

6. Warrant Certificate shall be delivered to the following address:

_____

_____

_____

_____

The undersigned hereby acknowledges and agrees that, in connection with this Warrant Exchange and the issuance of the Warrant Certificate, the Holder is deemed to have surrendered the number of Pre-Funded Warrants in form of Global Warrants in the name of the Holder equal to the number of Warrants evidenced by the Warrant Certificate.

[SIGNATURE OF HOLDER]

Name of Investing Entity: _____

Signature of Authorized Signatory of Investing Entity: _____

Name of Authorized Signatory: _____

Title of Authorized Signatory: _____

Date: _____

Annex C: Form of Underwriter Warrant Certificate Request Notice

WARRANT CERTIFICATE REQUEST NOTICE

To: Continental Stock Transfer & Trust Company, as Warrant Agent for XORTX Therapeutics Inc. (the "Company")

The undersigned Holder of Underwriter Warrants ("Underwriter Warrants") in the form of Global Warrants issued by the Company hereby elects to receive a Warrant Certificate evidencing the Warrants held by the Holder as specified below:

7. Name of Holder of Underwriter Warrants in form of Global Warrants: _____

8. Name of Holder in Warrant Certificate (if different from name of Holder of Underwriter Warrants in form of Global Warrants): _____

9. Number of Underwriter Warrants in name of Holder in form of Global Warrants: _____

10. Number of Underwriter Warrants for which Warrant Certificate shall be issued: _____

11. Number of Underwriter Warrants in name of Holder in form of Global Warrants after issuance of Warrant Certificate, if any: _____

12. Warrant Certificate shall be delivered to the following address:

_____

_____

_____

_____

The undersigned hereby acknowledges and agrees that, in connection with this Warrant Exchange and the issuance of the Warrant Certificate, the Holder is deemed to have surrendered the number of Underwriter Warrants in form of Global Warrants in the name of the Holder equal to the number of Warrants evidenced by the Warrant Certificate.

[SIGNATURE OF HOLDER]

Name of Investing Entity: _____

Signature of Authorized Signatory of Investing Entity: _____

Name of Authorized Signatory: _____

Title of Authorized Signatory: _____

Date: _____

Exhibit 1: Form of Common Warrant

Exhibit 2: Form of Pre-Funded Warrant

Exhibit 3: Form of Underwriter Warrant

Exhibit 10.15

CONSULTING AGREEMENT

This Consulting Agreement ("**Agreement**") is entered into as of March 1, 2018 (the "Effective Date") between XORTX Therapeutics Inc., a Ontario incorporated company ("**XORTX**") and W.B. Rowlands & Co.Ltd. (the "**Consultant**").

WHEREAS XORTX desires to retain the Consultant to perform certain consulting activities as described below, and the Consultant desires to serve as a consultant to XORTX and perform such activities under the terms of this Agreement.

NOW, THEREFORE, Consultant and XORTX agree as follows:

1. **SERVICES AND COMPENSATION**

(a) Consultant agrees to act as a consultant to XORTX with respect to such matters and projects as are mutually agreed from time to time by and between Consultant and XORTX, and perform the services set out in Exhibit A hereto (collectively, the "**Services**"); and

(b) XORTX agrees to pay the Consultant the compensation set forth in Exhibit A hereto for the performance of the Services.

2. **CONFIDENTIALITY**

(a) "**Confidential Information**" means any proprietary information technical data, trade secrets or know-how, including, but not limited to, research and product plans, products, services, markets, developments, inventions, processes, formulas, technology, marketing, finances or other business information disclosed to Consultant by XORTX either directly or indirectly in writing, orally or otherwise. Confidential Information also includes all Inventions (as defined below) and any other information or materials generated in connection with the Services.

(b) Consultant shall not, during or subsequent to the term of this Agreement, use any Confidential Information for any purpose whatsoever other than the performance of the Services on behalf of XORTX, or disclose Confidential Information to any third party. Consultant agrees that Confidential Information shall remain the sole property of XORTX. Consultant further agrees to take all reasonable precautions to prevent any unauthorized disclosure or use of Confidential Information. Notwithstanding the above, Consultant's obligation under this Section 2(b) relating to Confidential Information shall not apply to information which (i) is known to Consultant at the time of disclosure to Consultant by XORTX as evidenced by written records of Consultant, (ii) has become publicly known and made generally available through no wrongful act of Consultant, or (iii) has been rightfully received by Consultant from a third party authorized to make such disclosure.

(c) Consultant agrees that Consultant will not, during the term of this Agreement, improperly use or disclose to XORTX any proprietary information or trade secrets of any former or current employer or other person or entity to which Consultant has a duty to keep in confidence such information and that Consultant will not bring onto the premises of XORTX any unpublished document or proprietary information belonging to such employer, person or entity unless consented to in writing by the same. Consultant will indemnify XORTX and hold it harmless from and against all claims, liabilities, damages and expenses, including reasonable attorneys' fees and costs of suit, arising out of or in connection with any violation or claimed violation by XORTX of such third party's rights resulting in whole or in part from XORTX's use of the work product of Consultant under this Agreement.

(d) Consultant recognizes that XORTX has received and in the future will receive from third parties their confidential or proprietary information subject to a duty on XORTX's part to maintain the confidentiality of such information and to use it only for certain limited purposes. Consultant agrees that Consultant owes XORTX and such third parties, during the term of this Agreement and thereafter, a duty to hold all such confidential or proprietary information in the strictest confidence and not to disclose it to any person, firm or corporation or to use it except as necessary in carrying out the Services for XORTX consistent with XORTX's agreement with such third party.

(e) Upon the termination of this Agreement, or upon XORTX's earlier request, Consultant will deliver to XORTX all Confidential Information and XORTX's property relating thereto and all tangible embodiments thereof, in Consultant's possession or control.

3. **OWNERSHIP**

(a) Consultant hereby irrevocably assigns to XORTX all right, title and interest in and to any information (including, without limitation, business plans and/or business information), technology, know-how, materials, notes, records, designs, ideas, inventions, improvements, devices, developments, discoveries, compositions, trade secrets, processes, methods and/or techniques, whether or not patentable or copyrightable, that are conceived, reduced to practice or made by Consultant alone or jointly with others in the course of performing the Services or through the use of Confidential Information (collectively, "**Inventions**").

(b) Consultant agrees to sign, execute and acknowledge or cause to be signed, executed and acknowledged without cost, but at the expense of XORTX, any and all documents and to perform such acts as may be necessary, useful or convenient for the purposes of perfecting the foregoing assignments and obtaining, enforcing and defending intellectual property rights in any and all countries with respect to Inventions. It is understood and agreed that XORTX or XORTX's designee shall have the sole right, but not the obligation, to prepare, file, prosecute and maintain patent applications and patents worldwide with respect to Inventions.

(c) Upon the termination of this Agreement, or upon XORTX's earlier requests, Consultant will deliver to XORTX all property relating to, and all tangible embodiments of, Inventions in Consultant's possession or control.

(d) Consultant agrees that if, in the course of performing the Services, Consultant incorporates into any Invention developed hereunder any invention, improvement, development concept, discovery or other proprietary subject matter owned by Consultant or in which Consultant has an interest ("**Item**"), Consultant will inform XORTX in writing thereof, and XORTX is hereby granted and shall have a non-exclusive, royalty-free, perpetual, irrevocable, worldwide license to make, have made, modify, reproduce, display, use and sell such Item as part of or in connection with the exploitation of such Invention.

(e) Consultant agrees that if XORTX is unable because of Consultant's unavailability, mental or physical incapacity, or for any other reason, to secure Consultant's signature to apply for or to pursue any application or registration for any intellectual property rights covering any Invention, then Consultant hereby irrevocably designates and appoints XORTX and its duly authorized officers and agents as Consultant's agent and attorney-in-fact, to act for and in Consultant's behalf to execute and file any such applications and to do all other lawfully permitted acts to further the prosecution and issuance of such intellectual property rights thereon with the same legal force and effect as if executed by Consultant.

4 . **REPORTS**. Consultant agrees, from time to time during the term of this Agreement, to keep XORTX advised as to Consultant's progress in performing the Services and, as reasonably requested by XORTX, prepare written reports with respect thereto. It is understood that the time required in the preparation of such written reports shall be considered time devoted to the performance of the Services by Consultant. All such reports prepared by Consultant shall be the sole property of XORTX.

5. **TERM AND TERMINATION**

(a) This Agreement will commence on the Effective Date and will continue until termination as provided in Exhibit A.

(b) Either the Consultant or XORTX may terminate this Agreement upon 30 days prior written notice thereof to the other party.

(c) Upon termination of this Agreement, all rights and duties of the parties hereunder shall cease except:

(i) XORTX shall be obliged to pay, within thirty (30) days after receipt of Consultant's final statement, all amounts owing to Consultant for unpaid Services completed by Consultant and related expenses, if any, in accordance with the provisions of Section 1 hereof, and

(ii) Sections 2, 3, 5(c), 6, 7 and 9 shall survive termination of this Agreement.

6 . **INDEPENDENT CONTRACTOR**. Nothing in this Agreement shall in any way be construed to constitute Consultant as an agent, employee or representative of XORTX, but Consultant shall perform the Services as an independent contractor. The Consultant acknowledges and agrees that it is obligated to report as income all compensation received from XORTX pursuant to this Agreement.

7. **ARBITRATION AND EQUITABLE RELIEF**. XORTX and the Consultant agree that any dispute or controversy arising out of, in relation to, or in connection with this Agreement, or the making, interpretation, construction, performance or breach hereof, shall be finally settled by binding arbitration in Vancouver, British Columbia under the then current rules of the Canadian Arbitration Rules by one (1) arbitrator appointed in accordance with such rules. The arbitrator may grant injunctive or other relief in such dispute or controversy. The decision of the arbitrator shall be final, conclusive and binding on the parties to the arbitration. Judgment may be entered on the arbitrator's decision in any court of competent jurisdiction. The parties agree that, any provision of applicable law notwithstanding, they will not request and the arbitrator shall have no authority to award, punitive or exemplary damages against either party. The costs of the arbitration, including administrative and arbitrator's fees, shall be shared equally by the parties. Each party shall bear the cost of its own attorneys' fees and expert witness fees.

8. **NOTICES.** All notices required or allowed to be given under this Agreement shall be made either personally or by mailing same by prepaid registered post, addressed as hereinafter set forth or to such other address as may be designated from time to time by such party in writing, and any notice mailed as aforesaid shall be deemed to have been received by the addresses thereof on the fifth business day following the day of mailing:

If to the XORTX:

XORTX Therapeutics Inc.
4000, 421 - 7th Avenue SW
Calgary, Alberta
T2P 4K9
403-455-7727
adavidoff@xortx.com

If to the CONSULTANT:

W.B.Rowlands & Co. Ltd.
201 Bain Avenue,
Toronto, CANADA
M4K 1E9
416 406 2333 Office
426 230 7260 Cell
Browlands@xortx.com

Any party may, from time to time, change its address for service hereunder on written notice to the other party. Any notice may be served by hand delivery or by mailing same by prepaid, registered post, in a properly addressed envelope, addressed to the party to whom the notice is to be given at its address for service hereunder.

9. **GENERAL**. This Agreement (together with the Exhibits hereto) is the sole agreement and understanding between XORTX and the Consultant concerning the subject matter hereof, and it supersedes all prior agreements and understandings with respect to such matter. Any required notice shall be given in writing by customary means with receipt confirmed at the address of each party set forth below, or to such other address as either party may substitute by written notice to the other. Consultant shall not subcontract any portion of Consultant's duties under this Agreement without the prior written consent of XORTX. Neither this Agreement nor any right hereunder or interest herein may be assigned or transferred by Consultant without the express written consent of XORTX. XORTX may assign this Agreement to any entity that succeeds to substantially all of the business or assets of XORTX. This Agreement shall be governed by the laws of the Province of Alberta, without reference to its conflicts of law principles. This Agreement may only be amended or modified by a writing signed by both parties. Waiver of any term or provision of this Agreement or forbearance to enforce any term or provision by either party shall not constitute a waiver as to any subsequent breach or failure of the same term or provision or a waiver of any other term or provision of this Agreement. In the event that any provision of this Agreement becomes or is declared by a court of competent jurisdiction to be illegal, unenforceable or void, this Agreement shall continue in full force and effect without said provision, provided that no such severability shall be effective if it materially changes the economic benefit of this Agreement to either XORTX or Consultant.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the Effective Date.

XORTX THERAPEUTICS INC.

By: _____
Allen Davidoff, CEO

W.B. Rowlands & Co. Ltd.

By: _____
Bruce Rowlands

EXHIBIT A

SERVICES AND COMPENSATION

Scope of Work A

Act as XORTX's part-time Investor relations (IR) including:

(a) Work with identify, contact and maintain investor relationships with retail investors, family offices, venture capital groups and investment bankers. ;

(b) Investor relations support such as press releases, XORTX presentations, investor meetings; and

(c) Business planning, including preparation of IR financial forecast and budget for the business and support in evaluating new business opportunities.

Fees for Scope of Work A

$3000 per month plus GST based on estimated time commitment of five days per month.

Term for Scope of Work A

Scope of Work A has a one year term and renews automatically for subsequent one year terms. It can be cancelled by either party on 30 days notice.

Scope of Work B

Strategic financial guidance – modelling of business and new opportunities, evaluation of financing alternatives, participation and support of partnering and licensing negotiations

Fees for Scope of Work B

Grant of stock options in XORTX to purchase at least 200,000 shares vesting equally over 48 months. Vesting shall be, 25% immediately, then 25% on the anniversary of each year, until the entire option grant is complete.

Term for Scope of Work B

Scope of Work B has a one year term and is cancelable by either party at the end of the term with 12 months notice and renews automatically for successive one year terms.

Exhibit 23.1

CONSENT OF INDEPENDENT ACCOUNTANTS

We hereby consent to the incorporation in the Registration Statement on Form F-1 of Xortx Therapeutics Inc. of our auditors' report dated April 23, 2021, relating to the consolidated financial statements for the years ended December 31, 2020 and 2019.

We also consent to the reference to us as experts in matters of accounting and audit in this registration statement.

/s/ Smythe LLP

Smythe LLP
Chartered Professional Accountants

Vancouver, Canada
September 15, 2021