

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

**Amendment No. 2 To
FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

Repare Therapeutics Inc.

(Exact name of registrant as specified in its charter)

Canada (Federal)
(State or other jurisdiction of
incorporation or organization)

2834
(Primary Standard Industrial
Classification Code Number)

Not applicable
(I.R.S. Employer
Identification Number)

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(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

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Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this registration statement.

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 a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer <input type="checkbox"/>	Accelerated filer <input type="checkbox"/>
Non-accelerated filer <input checked="" type="checkbox"/>	Smaller reporting company <input checked="" type="checkbox"/>
	Emerging growth company <input checked="" type="checkbox"/>

If an emerging growth company, 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.

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be registered(1)	Proposed maximum offering price per share	Proposed maximum aggregate offering price(2)	Amount of registration fee(3)
Common shares, no par value	11,500,000	\$20.00	\$230,000,000	\$29,854

- (1) Estimated solely for the purpose of computing the amount of registration fee pursuant to Rule 457(a) under the Securities Act of 1933, as amended. Includes the registration fee for the additional common shares that the underwriters have the option to purchase.
- (2) Estimated solely for the purpose of calculating the amount of the registration fee.
- (3) Of this amount, the registrant previously paid \$19,757 of the registration fee.

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 of 1933, as amended, or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

[Table of Contents](#)

The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold 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 jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED JUNE 17, 2020
PRELIMINARY PROSPECTUS

10,000,000 Shares



Common Shares

We are offering 10,000,000 common shares. This is our initial public offering and no public market currently exists for our common shares. We expect the initial public offering price to be between \$18.00 and \$20.00 per common share. Our common shares have been approved for listing on the Nasdaq Global Select Market under the symbol “RPTX.”

We are an “emerging growth company” under the federal securities laws and will be subject to reduced public company reporting requirements for this prospectus and future filings.

Investing in our common shares involves a high degree of risk. See “[Risk Factors](#)” beginning on page 16 of this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

	<u>PER SHARE</u>	<u>TOTAL</u>
Initial public offering price	\$	\$
Underwriting commissions ⁽¹⁾	\$	\$
Proceeds, before expenses, to us	\$	\$

(1) We refer you to “Underwriting” beginning on page 213 for additional information regarding underwriter compensation.

We have granted the underwriters an option for a period of 30 days to purchase up to 1,500,000 additional common shares.

The underwriters expect to deliver the common shares against payment in New York, New York on or about _____, 2020.

Joint Book-Running Managers

Morgan Stanley

Goldman Sachs & Co. LLC

Cowen

Piper Sandler

Prospectus dated _____, 2020

TABLE OF CONTENTS

	<u>PAGE</u>		<u>PAGE</u>
PROSPECTUS SUMMARY	1	DESCRIPTION OF SHARE CAPITAL	186
RISK FACTORS	16	SHARES ELIGIBLE FOR FUTURE SALE	190
SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS	79	MATERIAL DIFFERENCES BETWEEN THE BUSINESS CORPORATIONS ACT (QUÉBEC) AND THE DELAWARE GENERAL CORPORATION LAW	193
MARKET AND INDUSTRY DATA	81	MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS FOR U.S. HOLDERS	205
USE OF PROCEEDS	82	MATERIAL CANADIAN FEDERAL INCOME TAX CONSIDERATIONS	211
DIVIDEND POLICY	83	UNDERWRITING	213
CAPITALIZATION	84	LEGAL MATTERS	219
DILUTION	86	EXPERTS	219
SELECTED CONSOLIDATED FINANCIAL DATA	89	SERVICE OF PROCESS AND ENFORCEMENT OF LIABILITIES	219
MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS	91	WHERE YOU CAN FIND ADDITIONAL INFORMATION	219
BUSINESS	112	INDEX TO FINANCIAL STATEMENTS	F-1
MANAGEMENT	151		
EXECUTIVE COMPENSATION	161		
CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS	177		
PRINCIPAL SHAREHOLDERS	182		

“Repare Therapeutics” and the Repare logo appearing in this prospectus are unregistered trademarks and SNIPRx is a registered trademark of Repare Therapeutics Inc. All other trademarks, trade names and service marks appearing in this prospectus are the property of their respective owners. Solely for convenience, the trademarks and trade names in this prospectus may be referred to without the ® and ™ symbols, but such references should not be construed as any indicator that their respective owners will not assert their rights thereto.

Neither we nor the underwriters have authorized anyone to provide any information or to make any representations other than those contained in this prospectus or in any free writing prospectuses prepared by or on behalf of us or to which we have referred you. We and the underwriters take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the shares offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus or in any applicable free writing prospectus is current only as of its date, regardless of its time of delivery or any sale of common shares. Our business, financial condition, results of operations and prospects may have changed since that date.

Neither we nor the underwriters have done anything that would permit this offering or possession or distribution of this prospectus or any free writing prospectus we may provide to you in connection with this offering in any jurisdiction where action for that purpose is required, other than in 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 and any such free writing prospectus outside of the United States.

PROSPECTUS SUMMARY

This summary highlights, and is qualified in its entirety by, the more detailed information contained elsewhere in this prospectus. This summary is not complete and does not contain all of the information you should consider in making your investment decision. Before investing in our common shares, you should carefully read this entire prospectus, especially the sections titled “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements and the related notes included elsewhere in this prospectus. Unless the context otherwise requires, the terms “Repare,” “Repare Therapeutics,” “the company,” “we,” “us,” “our” and similar references in this prospectus refer to Repare Therapeutics Inc. and its consolidated subsidiary.

Overview

We are a leading precision oncology company enabled by our proprietary synthetic lethality approach to the discovery and development of novel therapeutics. Synthetic lethality, or SL, represents a clinically validated approach to drug development. We use our proprietary, genome-wide, CRISPR-enabled SNIPRx platform to systematically discover and develop highly targeted cancer therapies focused on genomic instability, including DNA damage repair. SL arises when a deficiency in either of two genes is tolerated in cells, but simultaneous deficiencies in both genes cause cell death. Cancer cells that contain a mutation in one gene of a SL pair are susceptible to therapeutic intervention targeting the other gene pair. Using our SNIPRx platform, we are developing our pipeline of SL product candidates, including our lead product candidate, RP-3500, an oral small molecule inhibitor for the treatment of solid tumors with specific DNA damage repair-related genomic alterations. We anticipate filing an investigational new drug, or IND, application in the second quarter of 2020 and initiating an open-label Phase 1/2 clinical trial of RP-3500 in the third quarter of 2020.

We believe our powerful SL-based approach to the development of new precision oncology therapeutics has multiple potential benefits:

- **Ability to address previously untargetable tumor biology**, including, for example, loss-of-function mutations;
- **Enhanced benefit-risk profile**, by precisely targeting tumor cells with the defined mutation while sparing normal, non-cancerous cells;
- **Genetic stratification of patients**, potentially enabling higher response rates; and
- **Tumor-agnostic approach**, focusing on specific genetics and enabling the application to multiple tumor types.

A cornerstone of our company is our SNIPRx platform, which enables us to accurately identify SL gene pairs and the corresponding patients who are most likely to benefit from our therapies based on the genetic profile of their tumors. These differentiated patient selection insights have driven the development of our lead product candidate, RP-3500, which is designed as a selective inhibitor of the DNA repair protein ataxia telangiectasia and Rad3-related protein, or ATR, a kinase that is activated by DNA replication stress. Tumors containing alterations in genes encoding other DNA repair proteins, such as ataxia-telangiectasia mutated kinase, or ATM, are SL with ATR inhibition and were observed to be hypersensitive to RP-3500 in our preclinical models. We believe that the preclinical selectivity and pharmacokinetic properties of RP-3500 support the profile of a differentiated therapy with the potential to enhance anti-tumor activity as compared to third party ATR inhibitors currently in development. Based on our preclinical studies, we believe RP-3500 has the potential to provide therapeutic benefit to identified patient populations both as a monotherapy and in combination with other therapies such as poly (ADP-ribose) polymerase, or PARP, inhibitors.

In addition to RP-3500, we are developing a portfolio of product candidates based on targets identified using our SNIPRx platform to treat cancers with a high unmet medical need. We have a preclinical program that is focused on a novel target we discovered to be SL with amplification of cyclin E1, or CCNE1, in tumors such as gynecological and upper gastrointestinal malignancies. We anticipate advancing a clinical candidate for this potential first-in-class program into IND-enabling studies in the fourth quarter of 2020. We are also developing an inhibitor of polymerase theta, or Polq, which is SL with multiple gene deficiencies found in tumors, including BRCA1 or BRCA2. We anticipate advancing a clinical candidate and initiating IND-enabling studies for this program in the second half of 2021.

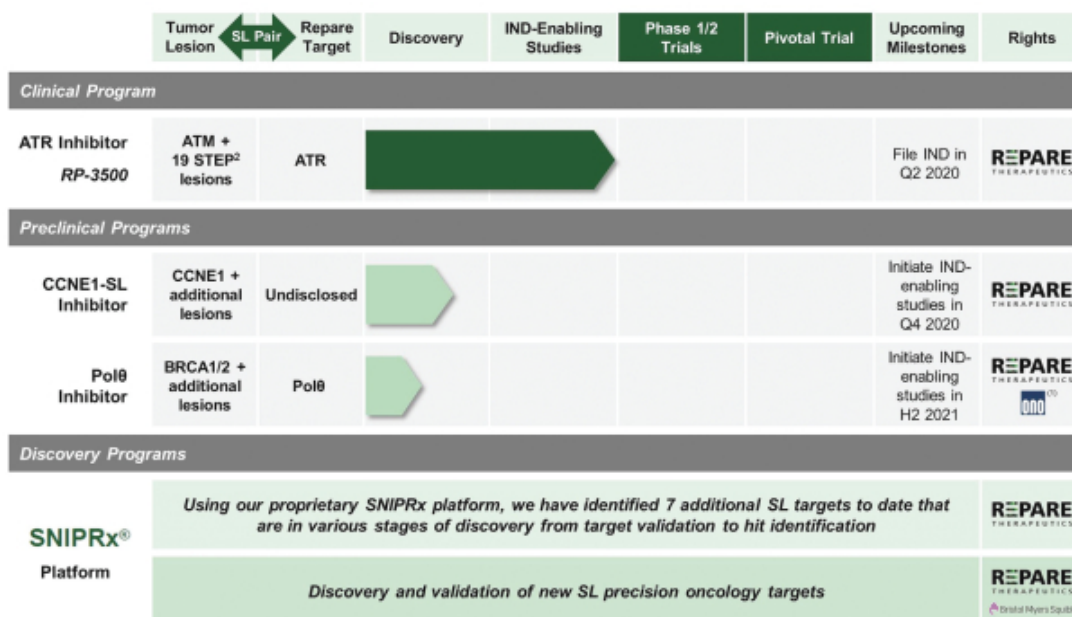
The core of our SNIPRx platform is the ability to identify both known and novel SL targets. We have built our SNIPRx platform based on three primary pillars:

1. **Identify** novel SL targets using our proprietary, genome-wide, CRISPR-enabled screening technology against clinically relevant genomic alterations in tumors with high unmet medical need;
2. **Design and synthesize** potent and selective small molecule inhibitors of these targets; and
3. **Expand** beyond the initial target patient population based on the additional genomic alterations identified by our proprietary SNIPRx Targeted Expansion of Patient Populations, or STEP2, screens that are SL with our inhibitors.

In May 2020, we entered into a collaboration and license agreement with Bristol-Myers Squibb Company, or Bristol Myers Squibb, pursuant to which we and Bristol Myers Squibb have agreed to collaborate in the research and development of potential new product candidates for the treatment of cancer. We are providing Bristol Myers Squibb access to a selected number of our existing early SNIPRx screening campaigns and novel campaigns. The collaboration consists of programs directed to both druggable targets and to targets commonly considered undruggable by traditional small molecule approaches. As part of the agreement, Bristol Myers Squibb paid us an initial upfront fee payment of \$50.0 million and made an equity investment of \$15.0 million into our company. We will also be eligible to receive up to to \$3.0 billion in total milestones across all potential programs. Such milestones consist of \$301 million in total milestones per program subject upon the achievement of certain specified research, development, regulatory and commercial milestones. See “Business—Collaborations and License Agreements—Collaboration and License Agreement with Bristol-Myers Squibb Company” for additional information.

Our Pipeline

We are leveraging our proprietary SNIPRx platform to discover, validate and build a robust pipeline of SL-based therapeutics. Our current pipeline is represented in the diagram below.



- (1) Ono Pharmaceutical has development and commercialization rights in Japan, South Korea, Taiwan, Hong Kong, Macau and certain other Southeast Asian countries. We retained all other rights outside of those countries. See “Business—Research Services, License and Collaboration Agreement with Ono Pharmaceutical Co.” for additional information.

Background on Targeted Oncology Therapeutics

A new generation of targeted oncology therapeutics has recently emerged that transcends single tumor, organ or histology-targeted cancers. These new therapies are tumor agnostic and are instead targeted at specific genomic alterations that underlie more complex tumor cell vulnerabilities. This has led to the approval of therapies that address specific genomic features of tumors, such as nTRK kinase inhibitors, including larotrectinib, for the treatment of tumors with nTRK gene fusions, and PD1 inhibitors, including pembrolizumab, for the treatment of tumors with microsatellite instability. This emerging trend for tumor-agnostic indications represents a breakthrough in drug development, clinical trial designs, drug approval patterns and speed to market.

Oncology drug development has been primarily focused on genes with readily druggable alterations that confer new or enhanced protein activity, known as gain-of-function targets, such as EGFR, which represent only 29% of targets in oncology. The remaining 71% of targets have historically been considered undruggable. These include both gain-of-function alterations (approximately 17%), such as CCNE1, as well as loss-of-function alterations (approximately 54%), such as BRCA1.

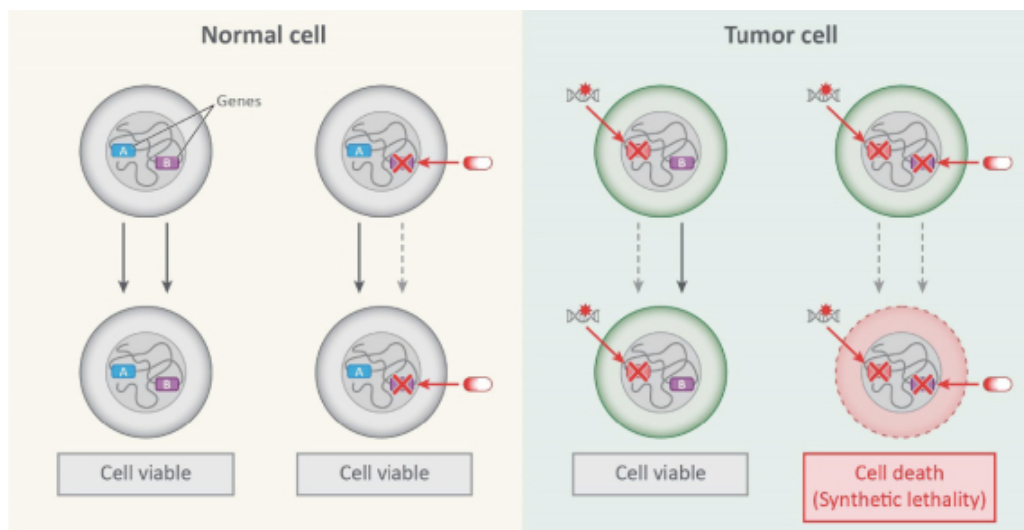
The more recent ability to identify a tumor's genetic vulnerabilities and networks of genes responsible for more complex gene functions underlying many cancers has been enabled through new and disruptive technical breakthroughs in the field including:

- **Clinically-relevant tumor genomic data:** the increasing adoption and regulatory acceptance of molecular tumor testing, enabling the accurate profiling of patient tumors;
- **Consolidated and annotated databases:** the availability of multiple new and publicly accessible databases that consolidate, analyze and synthesize new genetic data on tens of thousands of tumors; and
- **Tools to apply emerging genetic knowledge:** the emergence of new tools and methodologies, including CRISPR/Cas9, enabling large-scale studies of genetic networks underlying cancer biology.

The Synthetic Lethality Opportunity and Challenge

Synthetic lethality is a powerful approach and opportunity in oncology drug development that combines two key principles in treating patients with cancer through precision oncology: (1) identifying and selecting patient subgroups with specific genomic alterations in tumors that are most likely to benefit from these therapies and (2) improving tolerability and reducing toxicity by not affecting normal, non-cancerous cells.

SL arises when deficiencies in a pair of genes occur simultaneously to result in cell death, but if that deficiency exists in only one gene, the cell will survive. As depicted below, cancer cells that contain an alteration in one gene of a SL pair are susceptible to therapeutic intervention targeting the other gene pair, resulting in cell death, whereas normal cells are not affected by the inhibition of the targeted gene and remain viable.



The first clinically-validated SL gene pair was PARP-BRCA1/2, and based on the efficacy of PARP inhibitors, the SL approach to treating cancer has achieved substantial commercial validation. Multiple PARP inhibitors, including olaparib (AstraZeneca), niraparib (GlaxoSmithKline), talazoparib (Pfizer) and rucaparib (Clovis), have been approved for the treatment of tumors with BRCA and other DNA damage repair alterations, including ovarian, breast and pancreatic cancers. These four drugs generated over \$1.6 billion in worldwide sales in 2019 and are expected to reach over \$6.1 billion in worldwide sales by 2024.

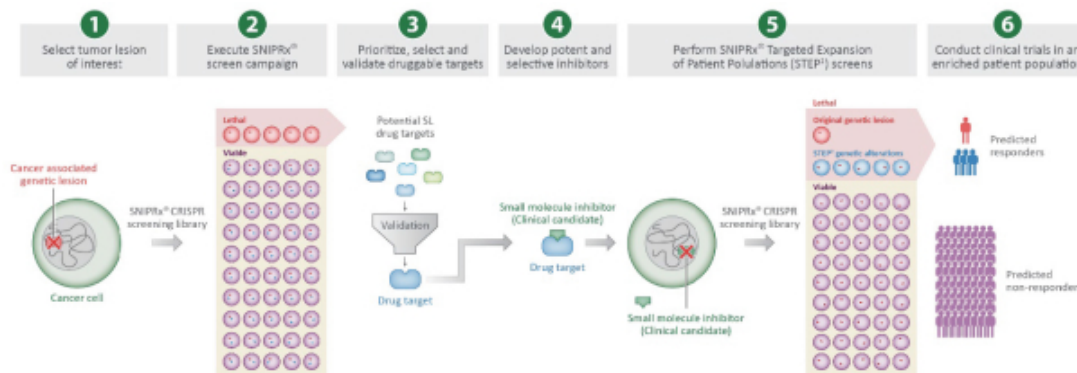
While SL offers a new route to uncover important gene targets for the treatment of cancers, identifying these SL gene pairs has been a challenge due to the lack of systematic, prospective and large-scale methods to capture and exploit these gene-gene relationships for new drug discovery and development.

Our Approach: An Overview of Our Drug Discovery and Development Platform

Our SNIPRx platform begins with a genome-wide CRISPR-based screening approach that utilizes our proprietary isogenic cell lines, which are cell lines that are identical with the exception of a single genomic alteration, to identify SL gene pairs. Our systematic and comprehensive screening approach has been optimized to significantly reduce false negatives, providing the opportunity to identify a larger and more accurate set of SL interactions as compared to what others have reported with CRISPR-based screening technologies.

We have systematically analyzed genomic data from approximately 60,000 tumor samples and identified an initial set of 16 clinically relevant tumor genomic alterations, which we refer to as tumor lesions, that are linked to genomic instability. These 16 tumor lesions are present in approximately 30% of tumors, and are largely mutually exclusive. For each of these 16 tumor lesions, we have completed a SNIPRx screen campaign to identify both previously reported and unreported targets that are SL with the tumor lesion of the campaign. The majority of our SNIPRx screen campaigns have identified multiple potential targets, which allows us to prioritize and select targets to advance into drug discovery based on a systematic and proprietary set of criteria, which include thresholds for biological validation, cellular function, known and likely toxicity, druggability with small molecules, patentability and the potential for clinical impact versus alternative therapies. Once a SL product candidate is identified, we perform our STEP² screen to identify additional genomic alterations that are SL with our product candidate. We believe the identification of these new SL pairs will allow us to rationally expand our targeted patient populations by enabling us to potentially treat patients with tumors across multiple genomic alterations with the same product candidate. For our clinical trials, we plan to enroll patients with tumors that contain either the original tumor lesion or any one of the genomic alterations identified by our STEP² screens. We believe this strategy will allow us to enroll only those patients who are most likely to achieve clinical benefit from our product candidates. This approach can be divided into six steps, as depicted in the graphic below.

Our Integrated Approach to Drug Discovery and Development



Our Clinical Program, RP-3500

Our lead product candidate, RP-3500, is a potent and selective oral small molecule inhibitor of ATR that we are developing for the treatment of tumors with mutations in ATM, which is a SL pair with ATR. ATR is a critical DNA damage response, or DDR, protein that acts as both the master regulator of the response to DNA

replication stress, as well as a central effector of the DNA damage checkpoint. Based on the previously published SL relationship between ATR and ATM, ATR has been the target of prior drug discovery efforts, and ATR inhibitors in development have demonstrated promising, durable clinical responses in a small number of patients in early clinical trials. Through our STEP² screens, we believe that we have more precisely identified and expanded the patient populations that would benefit from RP-3500, which allows us to differentiate and enrich our clinical development strategy, as well as address multiple types of solid tumors.

RP-3500 has demonstrated an optimized anti-tumor effect, selectivity and pharmacokinetics profile in preclinical studies that we believe supports the potential for it to be a leading ATR inhibitor, if approved. These data led to our decision to advance RP-3500 into IND-enabling studies. We also conducted multiple STEP² screens in which we confirmed the SL relationship between ATR and ATM and identified an additional 19 genes that are also SL with ATR, potentially expanding the patient populations that may benefit from our product candidate. We anticipate filing an IND application in the second quarter of 2020 and initiating an open-label Phase 1/2 clinical trial of RP-3500 in the third quarter of 2020. We have designed our Phase 1/2 clinical trial to enroll patients based on the presence of alterations in ATM or any of the 19 STEP²-identified genes. Based on the observed synergistic activity in preclinical models with ATM and STEP²-identified genes, we also intend to include a combination arm in this trial to evaluate the anti-tumor activity of RP-3500 with an approved PARP inhibitor. We expect to report preliminary safety and efficacy data for the monotherapy and combination therapy dose escalation phase of the trial in the second half of 2021.

Our Preclinical Programs

CCNE1-SL Inhibitor Program

Our CCNE1-SL inhibitor program is a proprietary drug discovery program for tumors with amplification of CCNE1. We have identified an undisclosed gene and corresponding protein, which we have found to be SL with amplifications in the gene for CCNE1. Amplification of CCNE1 is found in many tumor types, including gynecological and upper gastrointestinal malignancies, and these CCNE1-amplified tumors typically do not respond well to platinum or PARP inhibitor treatment. Through our SNIPRx screen campaign for targets that are SL with CCNE1 amplification, we have identified and validated a SL target that we believe has the characteristics of a therapeutic target. We have developed novel and selective inhibitors against the target that have repeatedly demonstrated compelling anti-tumor activity. We anticipate advancing a clinical candidate for this potential first-in-class program into IND-enabling studies in the fourth quarter of 2020.

Polymerase Theta (Polq) Program

We are developing a small molecule inhibitor of polymerase theta, or Polq, a SL target associated with BRCA mutations as well as other genomic alterations. Polymerase theta enzyme, or POLQ, is a DNA polymerase enzyme that participates in the repair of double-strand breaks in DNA. Mutations in genes such as BRCA1 and BRCA2 increase the frequency of these breaks, resulting in SL with Polq. Preclinical studies have shown that inactivation of Polq both on its own and in combination with PARP inhibitors reduces survival in BRCA-mutated cells, but not in BRCA wild-type cells. BRCA1 and BRCA2 mutations are routinely identified in multiple genetic profiling tests and observed in approximately 1% to 7% of patients with breast and ovarian cancer. We anticipate advancing a clinical candidate and initiating IND-enabling studies for this program in the second half of 2021.

Our Strategy

Our goal is to be the leading biopharmaceutical company developing precision oncology, small molecule therapies based on SL. The key elements of our strategy are to:

- **Advance our lead product candidate, RP-3500, through clinical development by leveraging our differentiated STEP² patient selection approach.** We designed RP-3500 to have a highly selective

and potent profile that may enable it to be a leading inhibitor of ATR, if approved. We intend to initiate an open-label Phase 1/2 clinical trial of RP-3500 in the third quarter of 2020 in patients with advanced tumors that have alterations in the ATM gene or any of the 19 genes identified through our STEP² screens. We believe this clinical trial design element will enrich the patient population in our trials with those who are most likely to respond to RP-3500. In parallel with the monotherapy dose-escalation portion of the trial, we intend to initiate a combination therapy arm to evaluate the safety and efficacy of RP-3500 in combination with an approved PARP inhibitor in the same patient subgroups. We expect preliminary safety and efficacy data for the monotherapy and combination therapy dose escalation phase of the trial in the second half of 2021, which may inform the design, including the targeted patient population, of a future pivotal trial.

- **Continue to advance our preclinical programs into clinical development.** In addition to RP-3500, we have two programs in advanced preclinical development. One of these programs is focused on a novel target we discovered using our SNIPRx platform to be SL with CCNE1 amplification in tumors such as gynecological and upper gastrointestinal malignancies. We anticipate advancing a clinical candidate for this potential first-in-class program into IND-enabling studies in the fourth quarter of 2020. We are also developing an inhibitor of Polq, which is SL with multiple gene deficiencies found in tumors, including BRCA1 or BRCA2. We anticipate advancing a clinical candidate and initiating IND-enabling studies for this program in the second half of 2021.
- **Extend our leading position in SL drug discovery.** We have systematically analyzed genomic data from approximately 60,000 tumor samples and have identified an initial set of 16 tumor lesions that are linked to genomic instability. This initial set of tumor lesions provides us with the opportunity to be among the first to mine this substantial, largely non-overlapping genomic space for new SL gene pairs and develop a robust portfolio of novel targeted therapeutics. We intend to continue leveraging our leading position in the identification of novel oncology SL gene pairs and systematically applying our STEP² screens to expand the addressable patient populations for each of our product candidates. We believe our approach will allow us to continue to build a sustainable and long-term pipeline of novel product candidates for the targeted treatment of cancers with high unmet medical need.
- **Opportunistically pursue strategic partnerships to maximize the full potential of our pipeline and SNIPRx platform.** The large number of pre-existing mutations affecting genomic stability in tumors combined with the high throughput of our SNIPRx platform has the potential to provide us with an abundance of novel targets. We believe this provides the opportunity to selectively enter into strategic partnerships and leverage our partners' complementary capabilities. We intend to selectively evaluate partnerships to maximize the long-term value of our research and development portfolio. We believe our recent collaboration and license agreement with Bristol Myers Squibb highlights the potential broad application of our platform in the search for the next generation of precision oncology medicines.

Intellectual Property

As of May 29, 2020, our patent portfolio included four pending U.S. provisional patent applications, consisting of one application covering RP-3500 and its use, one application covering uses of RP-3500, one application covering CCNE1-SL inhibitors and their use and one application covering uses of CCNE1-SL inhibitors. In addition, our patent portfolio included one pending international application under the Patent Cooperation Treaty of 1970 covering RP-3500 and its uses. See "Business—Intellectual Property" for additional information.

Our Corporate History and Team

Our company was founded in 2016 by field-leading academics and Versant Ventures to systematically employ SL insights and platforms and develop new precision oncology medicines. Our co-founder, Daniel

Durocher, Ph.D., a principal investigator at the Lunenfeld-Tanenbaum Research Institute, was an early pioneer of genome-wide, SL screening using CRISPR, which formed the framework for our SNIPRx platform. Our other co-founders, Agnel Sfeir, Ph.D. at NYU-Langone Medical Center and Frank Sicheri, Ph.D. at the Lunenfeld-Tanenbaum Research Institute, also played a key role in the development of our company.

We have assembled a highly qualified management team with broad experience in drug discovery and development to execute on our mission to develop novel precision oncology therapies based on SL. Our scientific co-founders and members of our management team collectively have extensive experience in oncology drug discovery and development and are pioneers in the SL field. Our management team includes industry veterans with prior experience at companies such as Pfizer, AstraZeneca, Merck, Bicycle Therapeutics and Clementia Pharmaceuticals. Since our inception, we have raised an aggregate of approximately \$135.2 million of gross proceeds from the sale of our preferred shares. Our investors include Versant Ventures, MPM Capital, Cowen Healthcare Investments, OrbiMed, BVF Partners, Redmile Group, Logos Capital, Celgene/Bristol Myers Squibb, Fonds de Solidarité FTQ, and Amplitude Ventures.

Risks Associated with Our Business

Our business is subject to a number of risks of which you should be aware before making a decision to invest in our common shares. These risks are more fully described in the section titled “Risk Factors,” including the following:

- 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 will require substantial additional funding to finance our operations. If we are unable to raise capital when needed, we could be forced to delay, reduce or terminate certain of our product development programs or other operations.
- We are very early in our development efforts. All of our product candidates are in preclinical development.
- Our business substantially depends upon the successful development of product candidates generated through the application of our SNIPRx platform, and in particular, our lead product candidate, RP-3500. If we are unable to obtain regulatory approval for, and successfully commercialize, products developed through the application of our SNIPRx platform, our business may be materially harmed.
- The outbreak of the novel strain of coronavirus disease, COVID-19, could adversely impact our business, including our preclinical studies and clinical trials.
- The successful development of targeted therapeutics, including our portfolio of synthetic lethality small molecule inhibitors, as well as any related diagnostics, is highly uncertain.
- The regulatory approval processes of the FDA and comparable foreign regulatory authorities are lengthy, time consuming and inherently unpredictable, and if we are ultimately unable to obtain regulatory approval for our product candidates, on a timely basis or at all, our business will be substantially harmed.
- Synthetic lethality represents an emerging class of precision medicine targets, and negative perceptions of the efficacy, safety or tolerability of this class of targets, including any that we develop, could adversely affect our ability to conduct our business, advance our product candidates or obtain regulatory approvals.
- We may not be successful in applying our SNIPRx platform to discover synthetic lethality targets with therapeutic and commercial potential or in the discovery and development of commercially viable product candidates for us or our collaborators.

- Difficulty in enrolling patients could delay or prevent clinical trials of our product candidates. We may find it difficult to enroll patients in our open-label Phase 1/2 clinical trial for RP-3500 with the genomic alterations that RP-3500 is designed to target.
- We face substantial competition, which may result in others developing or commercializing drugs before or more successfully than us.
- We rely on third parties to supply and manufacture our product candidates, and we expect to continue to rely on third parties to manufacture our products, if approved.
- Our success depends in part on our ability to obtain intellectual property rights for our proprietary technologies and product candidates, as well as our ability to protect our intellectual property. It is difficult and costly to protect our proprietary rights and technology, and we may not be able to ensure their protection.

Our Corporate Information

We were incorporated under the Canada Business Corporations Act, or CBCA, on September 6, 2016. Immediately prior to completion of this offering, we will be continued as a corporation under the Business Corporations Act (Québec), or QBCA. Our principal executive offices are located at 7210 Frederick-Banting, Suite 100, Montréal, Québec, Canada H4S 2A1, and our telephone number is (857) 412-7018. In June 2017, we incorporated our wholly-owned subsidiary, Repare Therapeutics USA Inc., a Delaware corporation. Our corporate website address is www.reparerx.com. Information contained on, or accessible through, our website is not a part of this prospectus. We have included our website in this prospectus solely as an inactive textual reference.

Implications of Being an Emerging Growth Company

We are an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. For so long as we remain an emerging growth company, we are permitted to rely on certain exemptions from various public company reporting requirements, including:

- being permitted to present in this prospectus only two years of audited financial statements, with correspondingly reduced “Management’s Discussion and Analysis of Financial Condition and Results of Operations” disclosure;
- reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements;
- not being required to submit to our shareholders a nonbinding advisory vote on executive compensation or any golden parachute payments not previously approved;
- not being required to have our internal control over financial reporting audited by our independent registered public accounting firm pursuant to Section 404(b) of the Sarbanes-Oxley Act of 2002; and
- an exemption from new or revised financial accounting standards until they would apply to private companies and from compliance with any new requirements adopted by the Public Company Accounting Oversight Board requiring mandatory audit firm rotation.

We may take advantage of these exemptions for up to the last day of the fiscal year ending after the fifth anniversary of this offering or such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company on the date that is the earliest of (1) the last day of the fiscal year in which we have total annual gross revenues of \$1.07 billion or more; (2) the last day of our fiscal year following the fifth anniversary of the date of the completion of this offering; (3) the date on which we have issued more

than \$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 may choose to take advantage of some but not all of these exemptions. We have taken advantage of certain reduced reporting requirements in this prospectus. Accordingly, the information contained herein may be different from the information you receive from other public companies in which you hold stock.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. We have elected to take advantage of the extended transition period to comply with new or revised accounting standards and to adopt certain of the reduced disclosure requirements available to emerging growth companies. As a result of the accounting standards election, we will not be subject to the same implementation timing for new or revised accounting standards as other public companies that are not emerging growth companies which may make comparison of our financials to those of other public companies more difficult. As a result of these elections, the information that we provide in this prospectus may be different than the information you may receive from other public companies in which you hold equity interests. In addition, it is possible that some investors will find our common shares less attractive as a result of these elections, which may result in a less active trading market for our common shares and higher volatility in our share price.

THE OFFERING

Common shares to be offered	10,000,000 shares
Option to purchase additional common shares	1,500,000 shares
Common shares to be outstanding after this offering	34,057,559 shares (35,557,559 shares if the underwriters exercise in full their option to purchase additional shares)
Use of proceeds	<p>We estimate that the net proceeds from this offering will be approximately \$172.7 million (or approximately \$199.2 million if the underwriters exercise in full their option to purchase up to 1,500,000 additional common shares), based on an assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting fees and commissions and estimated offering expenses payable by us.</p> <p>We currently intend to use the net proceeds from this offering, together with our existing cash, as follows:</p> <ul style="list-style-type: none">• approximately \$50.0 million to advance clinical development of RP-3500 through completion of our planned open-label Phase 1/2 clinical trial;• approximately \$110.0 million to fund other research and development initiatives; and• the remainder to fund working capital and other general corporate purposes. <p>See “Use of Proceeds” for additional information.</p>
Directed share program	<p>At our request, the underwriters have reserved for sale, at the initial public offering price, up to five percent of the shares offered by this prospectus for sale to some of our directors, officers, employees, business associates and related persons through a directed share program. If these persons purchase shares through the directed share program, this will reduce the number of shares available for sale to the general public. Any reserved shares that are not so purchased will be offered by the underwriters to the general public on the same terms as the other shares offered by this prospectus.</p>
Risk factors	<p>You should read the section titled “Risk Factors” for a discussion of factors to consider carefully, together with all the other information included in this prospectus, before deciding to invest in our common shares.</p>
Nasdaq Global Select Market symbol	“RPTX”

The number of common shares to be outstanding after this offering is based on 24,057,559 common shares outstanding as of March 31, 2020, which gives effect to (i) the conversion of all outstanding preferred shares into an aggregate of 21,558,393 common shares and (ii) the automatic exercise of the warrant held by an affiliate of Bristol Myers Squibb into an aggregate of 789,474 common shares, based on an assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, in each case effected immediately prior to the completion of this offering, and excludes:

- 3,323,801 common shares issuable upon the exercise of outstanding options as of March 31, 2020, at a weighted-average exercise price of \$2.09 per share;
- 569,016 common shares reserved for future issuance under our Repare Therapeutics Inc. Amended and Restated Option Plan, or the Existing Plan, as of March 31, 2020, which shares will cease to be available for future issuance immediately prior to the time that our 2020 Plan becomes effective in connection with this offering;
- 278,373 common shares issuable upon the exercise of outstanding options granted after March 31, 2020, at a weighted-average exercise price of \$8.60 per share;
- the exercise of outstanding options subsequent to March 31, 2020 into an aggregate of 85,369 common shares, at a weighted-average exercise price of \$1.92 per share;
- 3,600,000 common shares reserved for future issuance under our 2020 Equity Incentive Plan, or the 2020 Plan (of which 590,702 common shares issuable upon the exercise of options will be granted contingent and effective upon the execution of the underwriting agreement for this offering), which will become effective immediately prior to the execution of the underwriting agreement related to this offering, as well as any future increases in the number of common shares reserved for issuance under our 2020 Plan; and
- 327,000 common shares reserved for future issuance under our 2020 Employee Share Purchase Plan, or the ESPP, which will become effective immediately prior to the execution of the underwriting agreement related to this offering, as well as any future increases in the number of common shares reserved for issuance under our ESPP.

Unless otherwise indicated, all information contained in this prospectus assumes or gives effect to:

- the filing and effectiveness of our articles of continuance immediately prior to the completion of this offering and the adoption of our amended and restated bylaws immediately prior to the completion of this offering;
- the conversion of all outstanding preferred shares into an aggregate of 21,558,393 common shares immediately prior to the completion of this offering;
- the automatic exercise of the warrant held by an affiliate of Bristol Myers Squibb into an aggregate of 789,474 common shares, based on an assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, immediately prior to the completion of this offering;
- a 1-for-6.062 reverse stock split of our common shares and preferred shares effected on June 12, 2020;
- no exercise of the outstanding options described above; and
- no exercise by the underwriters of their option to purchase up to 1,500,000 additional common shares.

SUMMARY CONSOLIDATED FINANCIAL DATA

The following tables set forth our financial data for the periods indicated. We have derived the summary consolidated statements of operations data for the years ended December 31, 2017, 2018 and 2019 from our audited consolidated financial statements appearing elsewhere in this prospectus. We have derived the summary consolidated statements of operations data for the three-month periods ended March 31, 2019 and 2020 and the summary consolidated balance sheet data as of March 31, 2020 from our unaudited interim consolidated financial statements appearing elsewhere in this prospectus. Our historical results are not necessarily indicative of the results to be expected in the future.

You should read this consolidated summary financial data together with our consolidated financial statements and related notes to those statements, as well as the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” which are included elsewhere in this prospectus. The summary financial data in this section are not intended to replace our consolidated financial statements and are qualified in their entirety by our consolidated financial statements and related notes included elsewhere in this prospectus.

	YEAR ENDED DECEMBER 31,			THREE MONTHS ENDED MARCH 31,	
	2017	2018	2019	2019	2020
(in thousands, except share and per share amounts)					
Summary of Consolidated Operations Data:					
Operating expenses:					
Research and development, net of tax credits	\$ 4,401	\$ 9,906	\$ 20,995	\$ 3,703	\$ 8,632
General and administrative	1,774	2,914	5,382	1,076	2,183
Total operating expenses	6,175	12,820	26,377	4,779	10,815
Loss from operations	(6,175)	(12,820)	(26,377)	(4,779)	(10,815)
Other (expense) income, net:					
Realized and unrealized (loss) gain on foreign exchange	(147)	(292)	712	72	(1,731)
Change in fair value of convertible notes	(1,615)	—	—	—	—
Change in fair value of series A preferred share tranche obligation	180	(1,130)	(1,350)	(20)	—
Other expense	(39)	(6)	(6)	(2)	(2)
Total other expense, net	(1,621)	(1,428)	(644)	50	(1,733)
Loss before income taxes	(7,796)	(14,248)	(27,021)	(4,729)	(12,548)
Income tax expense	—	(35)	(195)	(109)	(53)
Net loss and comprehensive loss	\$ (7,796)	\$ (14,283)	\$ (27,216)	\$ (4,838)	\$ (12,601)
Net loss per share:(1)					
Basic and diluted	\$ (5.12)	\$ (9.35)	\$ (17.81)	\$ (3.17)	\$ (7.71)
Weighted average shares used in computing net loss per share:(1)					
Basic and diluted	1,522,544	1,528,374	1,528,374	1,528,374	1,634,056

	YEAR ENDED DECEMBER 31,		THREE MONTHS ENDED MARCH 31,	
	2017	2018	2019	2020
	(in thousands, except share and per share amounts)			
Pro forma net loss per share (unaudited):(1)				
Basic and diluted		\$ (1.64)		\$ (0.54)
Weighted average shares outstanding used in computing pro forma net loss per share (unaudited):(1)				
Basic and diluted		15,790,631		23,192,449

- (1) See Note 13 to our audited consolidated financial statements and Note 7 to our unaudited condensed consolidated financial statements included elsewhere in this prospectus for an explanation of the calculations of our basic and diluted net loss per share, pro forma net loss per share and the weighted-average number of shares used in the computation of the per share amounts.

	AS OF MARCH 31, 2020		
	ACTUAL	PRO FORMA(1)	PRO FORMA AS ADJUSTED(2)
	(in thousands)		
Consolidated Balance Sheet Data:			
Cash	\$ 83,711	\$ 83,711	\$ 271,411
Working capital(3)	80,578	80,578	268,278
Total assets	93,569	93,569	281,269
Convertible preferred shares	135,997	—	—
Accumulated deficit	(62,542)	(62,542)	(62,542)
Total shareholders' (deficit) equity	(58,135)	77,862	265,562

- (1) The pro forma column reflects the conversion of all of the outstanding preferred shares into an aggregate of 21,558,393 common shares upon completion of this offering.
- (2) The pro forma as adjusted column reflects (i) the pro forma adjustments set forth above, (ii) the sale of 10,000,000 common shares in this offering at an assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting fees and commissions and estimated offering expenses payable by us, and (iii) the issuance of a warrant to an affiliate of Bristol Myers Squibb on May 26, 2020 for proceeds of \$15.0 million and the automatic exercise of the warrant into an aggregate of 789,474 common shares, based on an assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus. The pro forma as adjusted column excludes the \$50.0 million upfront payment from Bristol Myers Squibb pursuant to the collaboration and license agreement entered into on May 26, 2020.
- (3) We define working capital as current assets less current liabilities.

The pro forma as adjusted information discussed above is illustrative only and will depend on the actual initial public offering price and other terms of this offering determined at pricing. Each \$1.00 increase or decrease in the assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease each of the amount of cash, working capital, total assets and total shareholders' (deficit) equity by \$9.3 million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting fees and commissions and estimated offering expenses payable by us. We may also increase or decrease the number of shares we are offering. Each increase or decrease of 1,000,000 in the number of common shares offered by us would increase or decrease each of cash, working capital, total assets and total shareholders' (deficit) equity by \$17.7 million, assuming the assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting fees and commissions.

RISK FACTORS

Investing in our common shares involves a high degree of risk. You should carefully consider the risks described below, as well as the other information in this prospectus, including our consolidated financial statements and the related notes and “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” before deciding whether to invest in our common shares. The occurrence of any of the events or developments described below could harm our business, financial condition, results of operations and prospects. In such an event, the market price of our common shares could decline and you may lose all or part of your investment.

Risks Related to Our Financial Position and Capital Needs

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 preclinical-stage biopharmaceutical company founded in 2016, and our operations to date have focused primarily on raising capital, organizing and staffing our company, conducting discovery and research activities, identifying potential synthetic lethal, or SL, gene pairs, establishing and protecting our intellectual property portfolio including for our proprietary SNIPRx platform, developing and progressing our product candidates through preclinical studies and preparing for clinical trials and establishing arrangements with third parties for the manufacture of initial quantities of our product candidates and component materials. We do not have any product candidates approved for sale and have not generated any revenue from product sales. Additionally, as an organization, we have not yet demonstrated an ability to successfully complete clinical development, obtain regulatory approvals, manufacture a commercial-scale product or arrange for a third party to do so on our behalf, or conduct sales and marketing activities necessary for successful commercialization. Consequently, any predictions about our future success or viability may not be as accurate as they could be if we had a longer operating history.

We may encounter unforeseen expenses, difficulties, complications, delays and other known or unknown factors in achieving our business objectives. In time, we will need to transition 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.

Additionally, we expect our financial condition and operating results to continue to fluctuate from quarter to quarter and year to year due to a variety of factors, many of which are beyond our control. Accordingly, you should not rely upon the results of any quarterly or annual periods as indications of future operating performance.

We have incurred significant operating losses since inception and anticipate that we will continue to incur substantial operating losses for the foreseeable future and may never achieve or maintain profitability.

Investment in biopharmaceutical product development is a highly speculative undertaking and entails substantial upfront capital expenditures and significant risk that any potential product candidate will fail to demonstrate adequate efficacy or an acceptable safety profile, gain regulatory approval and become commercially viable. We are still in the early stages of development of our product candidates and have not yet initiated our first clinical trial. We have no products approved for commercial sale and have not generated any product revenue to date, and we are devoting substantially all of our financial resources and efforts to research and development of our product candidates including RP-3500, as well as to enhancing our SNIPRx platform. Since our inception, we have funded our operations primarily through equity financings, and have raised an aggregate of approximately \$135.2 million of gross proceeds from the sale of our preferred shares.

We have incurred significant operating losses since our inception in 2016. Our net loss was \$12.6 million for the three months ended March 31, 2020 and \$7.8 million, \$14.3 million and \$27.2 million for the years ended

[Table of Contents](#)

December 31, 2017, 2018 and 2019, respectively. As of March 31, 2020, we had an accumulated deficit of \$62.5 million. We expect to continue to incur significant expenses and increasing operating losses for the foreseeable future. It could be several years, if ever, before we have a commercialized drug. We anticipate that our expenses will increase substantially if, and as, we:

- continue our ongoing and planned development of RP-3500, including our planned open-label Phase 1/2 clinical trial of RP-3500;
- initiate preclinical studies and clinical trials for any additional product candidates that we may pursue in the future, including our earlier-stage programs;
- seek to identify novel SL targets, develop small molecule inhibitors of these targets, nominate and develop additional product candidates and further expand our clinical product pipeline;
- seek regulatory approvals for RP-3500 and any future product candidates that successfully complete clinical trials;
- build a portfolio of product candidates through the discovery, development, or acquisition or in-license of drugs, product candidates or technologies;
- establish a sales, marketing, manufacturing and distribution capability to commercialize RP-3500 and any future product candidate for which we may obtain marketing approval;
- maintain, protect and expand our intellectual property portfolio;
- acquire or in-license other product candidates and technologies;
- hire additional clinical, regulatory and scientific personnel;
- add operational, financial and management information systems and personnel, including personnel to support our product development and planned future commercialization efforts; and
- incur additional legal, accounting and other expenses associated with operating as a public company.

To become and remain profitable, we must succeed in developing and eventually commercializing products that generate significant revenue. This will require us to be successful in a range of challenging activities, including completing clinical trials of RP-3500 and any future product candidates that we may pursue, obtaining regulatory approval, procuring commercial-scale manufacturing, marketing and selling RP-3500 and any future products for which we may obtain regulatory approval, as well as discovering or acquiring and then developing additional product candidates. We are only in the preliminary stages of some of these activities and have never initiated a clinical trial. We may never succeed in these activities and, even if we do, may never generate revenues that are significant enough to achieve profitability.

Because of the numerous risks and uncertainties associated with drug development, we are unable to accurately predict the timing or amount of expenses or when, or if, we will be able to achieve profitability. Our expenses could increase beyond our expectations if we are required by the U.S. Food and Drug Administration, or FDA, the European Medicines Agency, or EMA, or other regulatory authorities to perform studies in addition to those we currently expect, or if there are any delays in the initiation and completion of our clinical trials or the development of RP-3500 or any future product candidates.

Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would decrease the value of our common shares and could impair our ability to raise capital, maintain our research and development efforts, expand our business or continue our operations. A decline in the value of our common shares could also cause you to lose all or part of your investment.

[Table of Contents](#)

We will require substantial additional funding to finance our operations. If we are unable to raise capital when needed, we could be forced to delay, reduce or terminate certain of our product development programs or other operations.

To date, we have primarily funded our operations through private placements of equity securities. We expect to spend substantial amounts to advance our product candidates into clinical development and to complete the clinical development of, seek regulatory approvals for and commercialize our product candidates, if approved. We will require additional capital beyond the proceeds of this offering, which we may raise through equity offerings, debt financings, marketing and distribution arrangements and other collaborations, strategic alliances and licensing arrangements or other sources to enable us to complete the development and potential commercialization of our product candidates. Furthermore, upon the closing of this offering, we expect to incur additional costs associated with operating as a public company. Adequate additional financing may not be available to us on acceptable terms, or at all. Our failure to raise capital as and when needed would have a negative effect on our financial condition and our ability to pursue our business strategy. In addition, attempting to secure additional financing may divert the time and attention of our management from day-to-day activities and harm our product candidate development efforts. If we are unable to raise capital when needed or on acceptable terms, we would be forced to delay, reduce or eliminate certain of our research and development programs.

As of March 31, 2020, our cash was \$83.7 million. We believe that the net proceeds from this offering, together with our existing cash on hand and the \$65.0 million payment Bristol-Myers Squibb Company, or Bristol Myers Squibb, paid us in connection with our entry into the collaboration and license agreement during the second quarter of 2020, will enable us to fund our operating expenses and capital expenditure requirements at least through 2022. However, we will need to obtain substantial additional funding in connection with our continuing operations and planned activities. Our future capital requirements will depend on many factors, including:

- the initiation, timing, costs, progress and results of our planned clinical trials of RP-3500;
- the progress of preclinical development and possible clinical trials of our current earlier-stage programs;
- the scope, progress, results and costs of our research programs and preclinical development of other product candidates that we may pursue;
- the development requirements of other product candidates that we may pursue;
- our headcount growth and associated costs as we expand our research and development and establish a commercial infrastructure;
- the timing and amount of milestone and royalty payments that we are required to make or eligible to receive under our current or future collaboration agreements;
- the cost of establishing a sales, marketing and distribution infrastructure to commercialize any product candidates for which we may obtain marketing approval;
- the outcome, timing and cost of meeting regulatory requirements established by the FDA, EMA and other regulatory authorities;
- the costs and timing of future commercialization activities, including product manufacturing, marketing, sales and distribution, for any of our product candidates for which we receive marketing approval;
- the cost of expanding, maintaining and enforcing our intellectual property portfolio, including filing, prosecuting, defending and enforcing our patent claims and other intellectual property rights;
- the cost of defending potential intellectual property disputes, including patent infringement actions brought by third parties against us or any of our product candidates;
- the effect of competing technological and market developments;

[Table of Contents](#)

- the cost and timing of completion of commercial-scale manufacturing activities;
- the extent to which we partner our programs, acquire or in-license other product candidates and technologies or enter into additional strategic collaborations;
- the revenue, if any, received from commercial sales of RP-3500 and any future product candidates for which we receive marketing approval;
- add equipment and physical infrastructure to support our research and development; and
- the costs of operating as a public company.

Identifying potential product candidates and conducting preclinical testing and clinical trials is a time-consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain regulatory approval and achieve product sales. In addition, RP-3500 and any future product candidates, if approved, may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of products that we do not expect to be commercially available for several years, if at all. Accordingly, we will need to continue to rely on additional financing to achieve our business objectives. Adequate additional financing may not be available to us on acceptable terms, or at all. In addition, we may seek additional capital due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. If we are unable to raise capital when needed or on attractive terms, we could be forced to delay, reduce or altogether terminate our research and development programs or future commercialization efforts.

Raising additional capital will cause dilution to our shareholders, including purchasers of our common shares in this offering, restrict our operations or require us to relinquish rights to our product candidates.

Until such time, if ever, as we can generate substantial product revenue, we expect to finance our cash needs through public or private equity or debt financings, third-party funding, marketing and distribution arrangements, as well as other collaborations, strategic alliances and licensing arrangements, or any combination of these approaches. We do not have any committed external source of funds. 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 securities may include liquidation or other preferences that adversely affect your rights as a shareholder. Debt and equity financings, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as redeeming our shares, making investments, incurring additional debt, making capital expenditures, declaring dividends or placing limitations on our ability to acquire, sell or license intellectual property rights.

If we raise additional capital through future collaborations, strategic alliances or third-party licensing arrangements, we may have to relinquish certain valuable rights to our intellectual property, future revenue streams, research programs or product candidates, or grant licenses on terms that may not be favorable to us. If we are unable to raise additional capital when needed, we may be required to delay, limit, reduce or terminate our clinical development or future commercialization efforts, or grant rights to develop and market product candidates that we would otherwise develop and market ourselves.

Risks Related to the Development of Our Product Candidates

We are very early in our development efforts. All of our product candidates are in preclinical development. If we are unable to advance RP-3500 or any of our other product candidates into and through clinical development, obtain regulatory approval and ultimately commercialize RP-3500 or any of our other product candidates, or experience significant delays in doing so, our business will be materially harmed.

All of our product candidates are still in preclinical development. We have no products approved for sale and our lead product candidate, RP-3500, is not yet in clinical development and will require clinical

[Table of Contents](#)

development, regulatory review and approval in each jurisdiction in which we intend to market it, access to sufficient commercial manufacturing capacity, and significant sales and marketing efforts before we can generate any revenue from product sales. Our ability to generate product revenues, which we do not expect will occur for many years, if ever, will depend heavily on the successful clinical development and eventual commercialization of RP-3500 and one or more of our other product candidates. The success of our product candidates will depend on several factors, including the following:

- successful completion of preclinical studies, including the identification of clinical candidates for each of our preclinical programs;
- approval of investigational new drug, or IND, applications for our planned clinical trials or future clinical trials;
- acceptance by the FDA, EMA or foreign regulatory authority of our development strategy;
- successful initiation of clinical trials;
- successful patient enrollment in and completion of clinical trials;
- safety, tolerability and efficacy profiles for our product candidates that are satisfactory to the FDA, EMA or any foreign regulatory authority for marketing approval;
- the extent of any required post-marketing approval commitments to applicable regulatory authorities;
- obtaining and maintaining patent and trade secret protection and regulatory exclusivity for our product candidates;
- making arrangements with third-party manufacturers, or establishing manufacturing capabilities, for both clinical and commercial supplies of our product candidates, if any product candidates are approved;
- establishing sales, marketing and distribution capabilities and launching commercial sales of our products, if and when approved, whether alone or in collaboration with others;
- acceptance of our products, if and when approved, by patients, the medical community and third-party payors;
- effectively competing with other cancer therapies;
- obtaining and maintaining third-party coverage and adequate reimbursement and patients' willingness to pay out-of-pocket in the absence of such coverage and adequate reimbursement; and
- maintaining a continued acceptable safety profile of products following approval.

There is no guarantee that the results obtained in current preclinical studies, our planned open-label Phase 1/2 clinical trial of RP-3500 or any future clinical trials of any product candidate will be sufficient to obtain regulatory approval or marketing authorization for such product candidate.

Many of these risks are beyond our control, including the risks related to clinical development, the regulatory submission process, potential threats to our intellectual property rights and the manufacturing, marketing and sales efforts of any future collaborator. If we are unable to develop, receive regulatory approval for, or successfully commercialize our current or future product candidates, or if we experience delays as a result of any of these risks or otherwise, our business could be materially harmed.

Our business substantially depends upon the successful development of product candidates generated through the application of our SNIPRx platform, and in particular, our lead product candidate, RP-3500. If we are unable to obtain regulatory approval for, and successfully commercialize, products developed through the application of our SNIPRx platform, our business may be materially harmed.

Our lead product candidate, RP-3500, was developed through the application of our SNIPRx platform. All of our product candidates to date were derived based on the same principle of SL. As such, negative results in the

[Table of Contents](#)

development of RP-3500 may also impact our ability to obtain regulatory approval for our other product candidates, either at all or within anticipated timeframes because, although other product candidates may target different indications, the underlying technology platform, manufacturing process and development process is the same for all of our product candidates. Accordingly, a failure in any one program may decrease trust in our technology and affect the ability to obtain regulatory approval to continue or conduct clinical programs for other product candidates. If RP-3500 shows unexpected adverse events or a lack of efficacy in the indications we intend to treat, or if we experience other regulatory or developmental issues, our development plans and business could be significantly harmed.

We have no experience as a company in conducting clinical trials.

We have no experience as a company in conducting clinical trials. In part because of this lack of experience, we cannot be certain that our ongoing preclinical studies will be completed on time or if the planned preclinical studies and clinical trials will begin or be completed on time, if at all. Large-scale clinical trials would require significant additional financial and management resources and reliance on third-party clinical investigators, contract research organizations, or CROs, and consultants. Relying on third-party clinical investigators, CROs and consultants may force us to encounter delays that are outside of our control. We may be unable to identify and contract with sufficient investigators, CROs and consultants on a timely basis or at all. For our lead product candidate, RP-3500, we recently entered into a clinical services agreement, and may in the future enter into master services agreement, with a CRO to lead our first-in-human planned Phase 1/2 clinical trial. There can be no assurance that we will be able to negotiate and enter into any additional master services agreement with other CROs, as necessary, on terms that are acceptable to us on a timely basis or at all.

We may not be able to file INDs or IND amendments to commence additional clinical trials on the timelines we expect, and even if we are able to, the FDA may not permit us to proceed.

We plan to submit an IND for RP-3500 in the second quarter of 2020, but we may not be able to file INDs for our other product candidates on the timelines we expect. For example, we may experience manufacturing delays or other delays with IND-enabling studies. Moreover, we cannot be sure that submission of an IND will result in the FDA allowing further clinical trials to begin, or that, once begun, issues will not arise that suspend or terminate clinical trials. Additionally, even if such regulatory authorities agree with the design and implementation of the clinical trials set forth in an IND, we cannot guarantee that such regulatory authorities will not change their requirements in the future. These considerations also apply to new clinical trials we may submit as amendments to existing INDs or to a new IND. Any failure to file INDs on the timelines we expect or to obtain regulatory approvals for our trials may prevent us from completing our clinical trials or commercializing our products on a timely basis, if at all.

The effects of health epidemics, including the recent COVID-19 coronavirus pandemic, in regions where we, or the third parties on which we rely, have business operations could adversely impact our business, including our preclinical studies and clinical trials. The COVID-19 pandemic could materially affect our operations, including at our offices in Montréal and in the Boston Metro Area, which are currently subject to executive orders, and at our clinical trial sites, as well as the business or operations of our CROs or other third parties with whom we conduct business.

Our business could be adversely affected by health epidemics in regions where we have concentrations of 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, COVID-19, was reported to have surfaced in Wuhan, China. Since then, COVID-19 coronavirus has spread to multiple countries, including the United States, Canada and several European countries. Our company headquarters is located in Montréal, our U.S. headquarters is located in the Boston Metro Area, and our CROs and CMOs are located in the United States and abroad. 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

[Table of Contents](#)

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. In addition, on March 23, 2020, the Governor of Massachusetts ordered all individuals living in the Commonwealth of Massachusetts to stay at their place of residence for an indefinite period of time (subject to certain exceptions to facilitate authorized necessary activities) to mitigate the impact of the COVID-19 pandemic. The executive order exempts certain individuals needed to maintain continuity of operations of critical infrastructure sectors as determined by the federal government, and the Governor has clarified to MassBio that all biopharma research and development is essential and exempt. Similar orders and exemptions were also implemented by the Québec provincial government in March 2020.

In response to these public health directives and orders, we have implemented work-from-home policies to support the community efforts to reduce the transmission of COVID-19 and protect employees, complying with guidance from federal, state/provincial or municipal government and health authorities. We implemented a number of measures to ensure employee safety and business continuity. Employees who can work from home have been doing so, while those needing to work in laboratory facilities are divided into shifts to reduce the number of people gathered together at one time. Business travel has been suspended, and online and teleconference technology is used to meet virtually rather than in person. We have taken measures to secure our research and development project activities, while work in laboratories and facilities has been organized to reduce risk of COVID-19 transmission.

The effects of the executive orders and our work-from-home policies may negatively impact productivity, disrupt our business and delay our clinical programs and timelines (for example, our timeline for RP-3500), 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, operating results and financial condition.

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 the United States and other countries, or the availability or cost of materials, which would disrupt our supply chain.

If addition, our planned clinical trials may be affected by the COVID-19 pandemic, including:

- delays or difficulties in enrolling and retaining patients in our clinical trials, including patients that may not be able or willing 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 and retaining clinical site investigators and clinical site staff;
- increased rates of patients withdrawing from our clinical trials following enrollment as a result of contracting COVID-19, being forced to quarantine or being unable to visit clinical trial locations or otherwise comply with clinical trial protocols;
- 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, and because, who, as healthcare providers, may have heightened exposure to COVID-19 and adversely impact our clinical trial operations;
- interruption of our clinical supply chain or key clinical trial activities, such as clinical trial site monitoring, due to limitations on travel imposed or recommended by federal, state/provincial or municipal governments, employers and others; and

[Table of Contents](#)

- 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.

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

- delays in receiving approval from local 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 federal, state/provincial or municipal regulations as part of a response to the COVID-19 coronavirus outbreak 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 to accept data from clinical trials in these affected geographies.

The global outbreak of the COVID-19 coronavirus continues to rapidly evolve. The extent to which the COVID-19 coronavirus 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 the United States, Canada and other countries, business closures or business disruptions and the effectiveness of actions taken in the United States, Canada and other countries to contain and treat the disease.

The successful development of targeted therapeutics, including our portfolio of SL small molecule inhibitors, as well as any related diagnostics, is highly uncertain.

Successful development of targeted therapeutics, such as our portfolio of SL small molecule inhibitors, as well as any related diagnostics, is highly uncertain and is dependent on numerous factors, many of which are beyond our control. Our SNIPRx platform is based on new technologies and methods relating to precision target and biomarker identification, screening and validation. While we believe our clinical development approach of RP-3500 will eventually provide validation of our SNIPRx platform, we have not, to date, sought regulatory approval for RP-3500 or any therapeutics developed through our platform. As such, it is difficult to accurately predict the developmental challenges we may incur for our current and future product candidates as we proceed through product discovery, identification, preclinical studies and clinical trials.

Our SNIPRx platform is novel and may not be effective at identifying SL targets for product candidates. We therefore cannot provide any assurance that we will be able to successfully identify additional novel targets or product candidates, advance any of these additional product candidates or diagnostics for their associated biomarkers through the development process. Most of our proposed targets are unproven in clinical trials and there is no guarantee that the preclinical data will translate into a clinical relevance of such novel biomarkers and targets.

Targeted therapeutics that appear promising in the early phases of development may fail to reach the market for several reasons, including:

- research or preclinical studies may show our targeted small molecule inhibitors or antagonists to be less effective than desired or to have harmful or problematic side effects or toxicities;
- failure to accurately identify, validate or develop clinically relevant biomarkers for our targeted therapeutic product candidates;

Table of Contents

- trial results may show our targeted therapeutic small molecule inhibitors to be less effective than expected based on preclinical studies (e.g., a clinical trial could fail to meet its primary endpoint(s)) or to have unacceptable side effects or toxicities;
- the failure to receive the necessary regulatory approvals or a delay in receiving such approvals. Among other things, such delays may be caused by slow enrollment in clinical trials, patients dropping out of trials, length of time to achieve trial endpoints, additional time requirements for data analysis, preparation of IND applications, discussions with the FDA, an FDA request for additional preclinical or clinical data, or unexpected safety or manufacturing issues;
- manufacturing costs, formulation issues, pricing or reimbursement issues, or other factors that may make our targeted therapeutic small molecule inhibitors uneconomical;
- the size of the patient population that have disease with the appropriate biomarkers for which we are developing our product candidates may not be large enough to support commercial viability of our product candidates, if approved;
- proprietary rights of others and their competing products and technologies that may prevent our targeted therapeutic small molecule inhibitors, or the diagnostics for biomarkers associated with such small molecule inhibitors, from being commercialized;
- the development of alternative treatments or evolution in the standard of care for our targets may make our drugs less attractive; and
- our approach of using any of our product candidates in combination with other agents, including standard of care agents, may not materialize due to overlapping toxicity, high cost or an inability to replicate preclinical results in clinical trials.

As a result of these factors, it is more difficult for us to predict the time and cost of product candidate development, and we cannot predict whether the application of our SNIPRx platform will result in the identification, development, and regulatory approval of any products.

We may incur unexpected costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of our product candidates.

We may not commercialize, market, promote or sell any product candidate without obtaining marketing approval from the FDA, EMA or other comparable regulatory authority, and we may never receive such approvals. It is impossible to predict when or if any of our product candidates will prove effective or safe in humans and will receive regulatory approval. Before obtaining marketing approval from regulatory authorities for the sale of our product candidates, we must complete preclinical development and then conduct extensive clinical trials to demonstrate the safety and efficacy of our product candidates in humans. Clinical testing is expensive, difficult to design and implement, can take many years to complete and is uncertain as to outcome. Competing clinical trials for the same populations targeted as ours may limit our enrollment, or the results of competitors with similar technologies and products may falsely undermine the potential of our SNIPRx platform. A failure of one or more clinical trials can occur at any stage of testing. Moreover, preclinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval of their products.

We may experience numerous unforeseen events prior to, during, or as a result of, clinical trials that could delay or prevent our ability to receive marketing approval or commercialize RP-3500 and any future product candidates, including:

- delays in reaching a consensus with regulatory authorities on design or implementation of our clinical trials;

Table of Contents

- regulators or institutional review boards, or IRBs, may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site;
- delays in reaching agreement on acceptable terms with prospective CROs and clinical trial sites;
- the number of patients required for clinical trials of our product candidates may be larger than we anticipate, enrollment in these clinical trials may be slower than we anticipate, patients may drop out of these clinical trials at a higher rate than we anticipate or fail to return for post-treatment follow-up or we may fail to recruit suitable patients to participate in a trial;
- delays in our combination trials due to lack of access to the drugs with which we are testing our product candidates;
- clinical trials of our product candidates may produce negative or inconclusive results;
- imposition of a clinical hold by regulatory authorities as a result of a serious adverse event, concerns with a class of product candidates or after an inspection of our clinical trial operations, trial sites or manufacturing facilities;
- occurrence of serious adverse events associated with the product candidate that are viewed to outweigh its potential benefits;
- external business disruptions affecting the initiation, patient enrollment, development and operation of our clinical trials, including a public health emergency, such as the recent global outbreak of the COVID-19 coronavirus;
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols; or
- we may decide, or regulators may require us, to conduct additional clinical trials or abandon product development programs.

Any inability to successfully complete preclinical and clinical development could result in additional costs to us or impair our ability to generate revenue from future drug sales or other sources. In addition, if we make manufacturing or formulation changes to our product candidates, we may need to conduct additional testing to bridge our modified product candidate to earlier versions. Clinical trial delays could also shorten any periods during which we may have the exclusive right to commercialize our product candidates, if approved, or allow our competitors to bring competing drugs to market before we do, which could impair our ability to successfully commercialize our product candidates and may harm our business, financial condition, results of operations and prospects.

Additionally, if the results of our clinical trials are inconclusive or if there are safety concerns or serious adverse events associated with our product candidates, we may:

- be delayed in obtaining marketing approval, if at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or safety warnings;
- be subject to additional post-marketing testing requirements;
- be required to perform additional clinical trials to support approval or be subject to additional post-marketing testing requirements;
- have regulatory authorities withdraw, or suspend, their approval of the drug or impose restrictions on its distribution in the form of a modified risk evaluation and mitigation strategy, or REMS;
- be subject to the addition of labeling statements, such as warnings or contraindications;

[Table of Contents](#)

- be sued; or
- experience damage to our reputation.

Our product development costs will also increase if we experience delays in testing or obtaining marketing approvals. We do not know whether any of our preclinical studies or clinical trials will begin as planned, need to be restructured or be completed on schedule, if at all.

Clinical trials are very expensive, time consuming and difficult to design and implement.

Our product candidates will require clinical testing before we are prepared to submit a new drug application, or NDA, or equivalent application required in another jurisdiction for regulatory approval. We cannot predict with any certainty if or when we might submit an NDA or equivalent application required in another jurisdiction for regulatory approval for any of our product candidates or whether any such application will be approved by the FDA or other comparable regulatory authority, as applicable. Human clinical trials are very expensive and difficult to design and implement, in part because they are subject to rigorous regulatory requirements. For instance, the FDA or other comparable regulatory authority may not agree with our proposed endpoints for any future clinical trial of our product candidates, which may delay the commencement of our clinical trials. In addition, we may not succeed in developing and validating disease-relevant clinical endpoints based on insights regarding biological pathways for the diseases we are studying. The clinical trial process is also time consuming. We estimate that the successful completion of clinical trials for RP-3500 and any future product candidates will take several years to complete. Furthermore, failure can occur at any stage, and we could encounter problems that cause us to abandon or repeat clinical trials.

Success in preclinical studies or earlier clinical trials may not be indicative of results in future clinical trials and we cannot assure you that any ongoing, planned or future clinical trials will lead to results sufficient for the necessary regulatory approvals.

We have not yet initiated our first clinical trial, a planned open-label Phase 1/2 clinical trial of RP-3500. Success in preclinical testing and earlier clinical trials does not ensure that later clinical trials will generate the same results or otherwise provide adequate data to demonstrate the efficacy and safety of a product candidate. Preclinical tests and Phase 1 and Phase 2 clinical trials are primarily designed to test safety, to study pharmacokinetics and pharmacodynamics and to understand the side effects of product candidates at various doses and schedules. Success in preclinical studies and earlier clinical trials does not ensure that later efficacy trials will be successful, nor does it predict final results. Frequently, product candidates that have shown promising results in early clinical trials have subsequently suffered significant setbacks in later clinical trials. In addition, the design of a clinical trial can determine whether its results will support approval of a product and flaws in the design of a clinical trial may not become apparent until the clinical trial is well advanced. We have limited experience designing clinical trials and may be unable to design and execute a clinical trial to support regulatory approval. There is a high failure rate for drugs and biologic products proceeding through clinical trials. Many companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in late-stage clinical trials even after achieving promising results in preclinical testing and earlier-stage clinical trials. These setbacks have been caused by, among other things, preclinical findings made while clinical trials were underway or safety or efficacy observations made in clinical trials, including previously unreported adverse events. Additionally, we plan on pursuing tumor agnostic clinical development in our trials of RP-3500. However, anti-tumor activity may be different in each of the different tumor types we plan on evaluating in the clinical trial. Therefore, even though we plan on pursuing tumor agnostic clinical development of RP-3500, the tumor response may be low or clinically insignificant in patients with some cancers compared to others. This may result in discontinuation of development of RP-3500 as a monotherapy for patients with these tumor types due to insufficient clinical benefit while continuing development for a more limited population of patients more likely to benefit. As a consequence, we may need to start combination therapies or we may have to negotiate with the FDA to reach agreement on defining the optimal patient population, study design and size in order to obtain

[Table of Contents](#)

regulatory approval, any of which may require significant additional resources and delay the timing of our clinical trials and ultimately the approval, if any, of any of our product candidates.

In addition, differences in trial design between early-stage clinical trials and later-stage clinical trials make it difficult to extrapolate the results of earlier clinical trials to later clinical trials. The early trials will be single arm and not comparing the results with existing (or new) standard of care. Moreover, clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in clinical trials have nonetheless failed to obtain marketing approval of their products or had to withdraw the product after comparator or later stage trials delivered results. Additionally, some of our trials may be open-label studies, where both the patient and investigator know whether the patient is receiving the investigational product candidate or either an existing approved drug, introducing bias in early interpretation of the results. Most typically, open-label clinical trials test only the investigational product candidate and sometimes do so at different dose levels. Open-label clinical trials are subject to various limitations that may exaggerate any therapeutic effect as patients in open-label clinical trials are aware when they are receiving treatment. In addition, open-label clinical trials may be subject to an “investigator bias” where those assessing and reviewing the physiological outcomes of the clinical trials are aware of which patients have received treatment and may interpret the information of the treated group more favorably given this knowledge. Therefore, it is possible that positive results observed in open-label trials will not be replicated in later placebo-controlled trials.

Data obtained from preclinical and clinical activities are subject to varying interpretations, which may delay, limit or prevent regulatory approval. Moreover, as the development of the SL pair, ATM-ATR, is still early, any clinical validation to the SL approach to treating cancer may or may not validate our approach. In addition, we may experience regulatory delays or rejections as a result of many factors, including due to changes in regulatory policy during the period of our product candidate development. Any such delays could negatively impact our business, financial condition, results of operations and prospects.

Interim, “top-line” and preliminary data from our clinical trials that we announce or publish from time to time may change as more patient data become available and are subject to audit and verification procedures that could result in material changes in the final data.

From time to time, we may publish interim, “top-line” or preliminary data from our planned clinical trials. Interim data from clinical trials that we may complete are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data become available. Preliminary or “top-line” data also remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary data we previously published. As a result, interim and preliminary data should be viewed with caution until the final data are available. Differences between preliminary or interim data and final data could significantly harm our business prospects and may cause the trading price of our common shares to fluctuate significantly.

The regulatory approval processes of the FDA and comparable foreign regulatory authorities are lengthy, time consuming and inherently unpredictable, and if we are ultimately unable to obtain regulatory approval for our product candidates, on a timely basis or at all, our business will be substantially harmed.

The length of time necessary to complete clinical trials and to submit an application for marketing approval for a decision by a regulatory authority may be difficult to predict for targeted therapeutic small molecule inhibitors, in large part because of the limited regulatory history associated with them. The clinical trial requirements of the FDA and other comparable foreign regulatory authorities and the criteria these regulators use to determine the safety and efficacy of a product candidate vary substantially according to the type, complexity, novelty and intended use and market of the product candidate. There is a limited history of multi-tumor indications, and any regulatory approvals may be conditioned upon confirmatory trials with clinical endpoints

[Table of Contents](#)

such as survival. Such trials are not only more expensive to conduct but take several years to complete. Increasing pressure from reimbursement bodies may result in poor (or no) acceptance of early trials for reimbursement. Except for certain PARP inhibitors, no products based on SL have been approved to date by regulators. As a result, the regulatory approval process for product candidates such as ours is uncertain and may be more expensive and take longer than the approval process for product candidates based on other, better known or more extensively studied technologies. It is difficult to determine how long it will take or how much it will cost to obtain regulatory approvals for our product candidates in either the United States or other comparable regions of the world or how long it will take to commercialize our product candidates. Delay or failure to obtain, or unexpected costs in obtaining, the regulatory approval necessary to bring a potential product candidate to market would adversely affect our business, financial condition, results of operations and prospects.

Our product candidates could fail to receive regulatory approval for many reasons, including the following:

- the FDA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;
- we may be unable to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that a product candidate is safe and effective for its proposed indication;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval;
- we may be unable to demonstrate that a product candidate's clinical and other benefits outweigh its safety risks;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from preclinical studies or clinical trials;
- the data collected from clinical trials of our product candidates may not be sufficient to support the submission of an NDA to the FDA or other submission or to obtain regulatory approval in the United States or elsewhere;
- the FDA or comparable foreign regulatory authorities may fail to approve the manufacturing processes or facilities of third-party manufacturers with which we contract for clinical and commercial supplies; and
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

Prior to obtaining approval to commercialize a product candidate in the United States or elsewhere, we or our collaborators must demonstrate with substantial evidence from well-controlled clinical trials, and to the satisfaction of the FDA or comparable foreign regulatory agencies, that such product candidates are safe and effective for their intended uses. Results from nonclinical studies and clinical trials can be interpreted in different ways. Even if we believe the nonclinical or clinical data for our product candidates are promising, such data may not be sufficient to support approval by the FDA or comparable foreign regulatory authorities. The FDA may also require us to conduct additional preclinical studies or clinical trials for our product candidates either prior to or post-approval, or it may object to elements of our clinical development program. Depending on the extent of these or any other studies required by the FDA or comparable foreign regulatory authorities, approval of any regulatory approval applications that we submit may be delayed by several years, or may require us to expend significantly more resources than we have available.

Of the large number of potential products in development, only a small percentage successfully complete the FDA or comparable foreign regulatory approval processes and are commercialized. The lengthy approval process as well as the unpredictability of future clinical trial results may result in our failing to obtain regulatory approval to market our product candidates, which would significantly harm our business, results of operations and prospects.

[Table of Contents](#)

In addition, even if we were to obtain approval, regulatory authorities may approve any of our product candidates for fewer or more limited indications than we request, may impose significant limitations in the form of narrow indications, warnings, or a post-marketing risk management strategy such as a REMS or the equivalent in another jurisdiction. Regulatory authorities may not approve the price we intend to charge for our products, may grant approval contingent on the performance of costly post-marketing clinical trials, or may approve a product candidate with a label that does not include the labeling claims necessary or desirable for the successful commercialization of that product candidate. Any of the foregoing scenarios could materially harm the commercial prospects for our product candidates.

Synthetic lethality represents an emerging class of precision medicine targets, and negative perceptions of the efficacy, safety or tolerability of this class of targets, including any that we develop, could adversely affect our ability to conduct our business, advance our product candidates or obtain regulatory approvals.

Aside from PARP inhibitors, such as Lynparza, Rubraca, Zejula and Talzenna, no SL small molecule inhibitor therapeutics have been approved to date by the FDA or other comparable regulators. Adverse events in future clinical trials of our product candidates or in clinical trials of others developing similar products and the resulting publicity, as well as any other adverse events in the field of SL, or other products that are perceived to be similar to SL, such as those related to gene therapy or gene editing, could result in a decrease in the perceived benefit of one or more of our programs, increased regulatory scrutiny, decreased confidence by patients and CROs in our product candidates, and less demand for any product that we may develop. Our pipeline of SL small molecule inhibitor product candidates could result in a greater quantity of reportable adverse events or other reportable negative clinical outcomes, manufacturing reportable events or material clinical events that could lead to clinical delays or holds by the FDA or applicable regulatory authority or other clinical delays, any of which could negatively impact the perception of one or more of our SL programs, as well as our business as a whole. In addition, responses by U.S. federal or foreign governments to negative public perception may result in new legislation or regulations that could limit our ability to develop any product candidates or commercialize any approved products, obtain or maintain regulatory approval, or otherwise achieve profitability. More restrictive statutory regimes, government regulations, or negative public opinion would have an adverse effect on our business, financial condition, results of operations, and prospects, and may delay or impair the development of our product candidates and commercialization of any approved products or demand for any products we may develop.

We may not be successful in applying our SNIPRx platform to discover SL targets with therapeutic and commercial potential or in the discovery and development of commercially viable product candidates for us or our collaborators.

Our scientific approach focuses on applying our proprietary SNIPRx platform to identify SL targets across the human genome. Our drug discovery team then chooses targets identified by SNIPRx and develops potent and selective inhibitors of these targets. We use these inhibitors to further validate our SL findings before advancing them into clinical development.

We believe the results of our SNIPRx screen campaigns suggest that our platform is capable of identifying high quality product candidates, but past success in identifying potential product candidates does not assure future success for us with our internal drug discovery programs. Our SNIPRx platform is novel, and we may not succeed in applying our SNIPRx platform to identify targets for product candidates. We therefore cannot provide any assurance that we or our collaborators will be able to successfully identify additional product candidates or advance any of these additional product candidates. In addition, others may have discovered and prosecuted targets that we believe are undiscovered. As a result of these factors, it is more difficult for us to predict the time and cost of product candidate development, and we cannot predict whether the application of our SNIPRx platform will result in the identification, development, and regulatory approval of any products. In addition, we may not succeed in applying our STEP² screens to expand the potential patient populations that can be treated with our product candidates.

[Table of Contents](#)

Efforts to identify, acquire or in-license, and then develop product candidates require substantial technical, financial and human resources, whether or not any product candidates are ultimately identified. We apply our SNIPRx technology and STEP² screening in our efforts to discover potential precision targets for which our product candidates may be developed. Our efforts may initially show promise in identifying potential product candidates, yet fail to yield product candidates for clinical development, approved products or commercial revenues for many reasons, including the following:

- the methodology used may not be successful in identifying potential product candidates;
- competitors may develop alternatives that render any product candidates we develop obsolete;
- any product candidates we develop may nevertheless be covered by third parties' patents or other exclusive rights;
- a product candidate may be shown to have harmful side effects or other characteristics that indicate it is unlikely to be effective or otherwise does not meet applicable regulatory criteria;
- a product candidate may not be capable of being produced in commercial quantities at an acceptable cost, or at all; and
- a product candidate may not be accepted as safe and effective by physicians, patients, the medical community or third-party payors.

Difficulty in enrolling patients could delay or prevent clinical trials of our product candidates. We may find it difficult to enroll patients in our open-label Phase 1/2 clinical trial for RP-3500 with the genomic alterations that RP-3500 is designed to target.

Identifying and qualifying patients to participate in clinical trials of our product candidates is critical to our success. The timing of completion of our clinical trials depends in part on the speed at which we can recruit patients to participate in testing our product candidates, and we may experience delays in our clinical trials if we encounter difficulties in enrollment. 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. In particular, because we are focused on patients with specific genomic alterations, our ability to enroll eligible patients may be limited or may result in slower enrollment than we anticipate. For example, with respect to RP-3500, we are researching 19 STEP²-identified genomic alterations in addition to ATM deficiency, including several novel genes that have not been previously reported as rendering sensitivity to ATR inhibitors. Further, certain of these genes are not yet included in commercially available panels or CLIA-validated panels used in large academic centers. As such, for our planned Phase 1/2 trial, we have identified and partnered with multiple large, leading clinical centers globally where tumor sequencing is the standard of care. While we believe that these panels will include the majority, if not all, of the 20 genes, genes may not be available on certain panels at our clinical sites. We cannot be certain how many patients will have each of the genomic alterations that RP-3500 is designed to target or that the number of patients enrolled for each mutation will suffice for regulatory approval and inclusion of each such mutation in the approved label. We may be unsuccessful in our efforts to work with our clinical partners to identify patients who are eligible for our clinical trial of RP-3500.

In addition, some of our competitors have ongoing clinical trials for product candidates that treat the same or similar populations as our product candidates, and patients who would otherwise be eligible for our clinical trials may instead enroll in clinical trials of our competitors' product candidates.

We are engaging third parties to develop patient selection tools for use in our clinical trials, but such third parties may not be successful in developing such tools, furthering the difficulty in identifying patients with the targeted genomic alterations for our clinical trials and risking enrollment into our trials. Next Generation Sequencing panels may not include genes required for screening for our clinical trials or may not be broadly commercially available. The optimal method of diagnosis is not yet known and the availability of third party

[Table of Contents](#)

payment for diagnostic tests may limit our clinical trials as well. Further, if we are unable to include patients with the targeted genomic alterations, this could compromise our ability to seek participation in FDA's expedited review and development programs or otherwise seek to accelerate clinical development and regulatory timelines.

The enrollment of patients further depends on many factors, including:

- the risks and benefits of the product candidate under trial;
- the availability and efficacy of competing therapies and clinical trials;
- the availability of genetic sequencing information for patient tumors so that we can identify patients with the targeted genomic alterations;
- the patient referral practices of physicians;
- the proximity of patients to clinical trial sites;
- the design of the clinical trial;
- our ability to recruit clinical trial investigators with the appropriate competencies and experience;
- the ability of any current or future license partner to execute on its development commitments and responsibilities for any product candidate to which it has acquired development rights in a given geography;
- our ability to obtain and maintain patient consents;
- reporting of the preliminary results of any of our clinical trials; and
- the risk that patients enrolled in clinical trials will drop out of the clinical trials before clinical trial completion.

Our clinical trials will compete with other clinical trials for product candidates that are in the same therapeutic areas as our product candidates, and this competition will reduce the number and types of patients available to us because some patients who might have opted to enroll in our clinical trials may instead opt to enroll in a clinical trial being conducted by one of our competitors. Since the number of qualified clinical investigators is limited, we expect to conduct some of our clinical trials at the same clinical trial sites that some of our competitors use, which will reduce the number of patients who are available for our clinical trials at such clinical trial sites. Moreover, because our product candidates represent a departure from more commonly used methods for cancer treatment and because our product candidates have not been tested in humans before, potential patients and their doctors may be inclined to use conventional therapies, such as chemotherapy, rather than enroll patients in any future clinical trial.

If we experience delays in the completion of, or termination of, any clinical trial of our product candidates, the commercial prospects of our product candidates will be harmed, and our ability to generate product revenue from any of these product candidates could be delayed or prevented.

Our product candidates may cause undesirable side effects or have other properties that could delay or prevent their regulatory approval, limit the commercial potential or result in significant negative consequences following any potential marketing approval.

Serious adverse events or undesirable side effects caused by our product candidates could cause us or regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA, EMA or other authorities. Results of our clinical trials could reveal a high and unacceptable severity and prevalence of side effects, toxicities or unexpected characteristics, including death.

Table of Contents

If unacceptable side effects or deaths arise in the development of our product candidates, we, the IRBs at the institutions in which our studies are conducted, the FDA or any comparable foreign regulatory authority could suspend or terminate our clinical trials or the FDA or other regulatory authorities could order us to cease clinical trials or deny approval of our product candidates for any or all targeted indications. Undesirable side effects or deaths in clinical trials with our product candidates may cause the FDA or comparable foreign regulatory authorities to place a clinical hold on the associated clinical trials, to require additional studies, or otherwise to delay or deny approval of our product candidates for any or all targeted indications. Treatment-related side effects could also affect patient recruitment or the ability of enrolled patients to complete the trial or result in potential product liability claims. In addition, these side effects may not be appropriately recognized or managed by the treating medical staff. We expect to have to train medical personnel using our product candidates to understand the side effect profiles for our clinical trials and upon any commercialization of any of our product candidates. Inadequate training in recognizing or managing the potential side effects of our product candidates could result in patient injury or death. Any of these occurrences may harm our business, financial condition and prospects significantly.

If any of our product candidates receives marketing approval, and we or others later identify undesirable side effects caused by any such product, including during any long-term follow-up observation period recommended or required for patients who receive treatment using our products, a number of potentially significant negative consequences could result, including:

- regulatory authorities may suspend, limit or withdraw approvals of such product, or seek an injunction against its manufacture and distribution;
- we may be required to recall a product or change the way such product is administered to patients;
- additional restrictions may be imposed on the marketing of the particular product or the manufacturing processes for the product;
- regulatory authorities may require additional warnings on the label, such as a boxed warning or contraindication, or issue safety alerts, Dear Healthcare Provider letters, press releases or other communications containing warnings or other safety information about the product;
- we may be required to implement a REMS or create a medication guide outlining the risks of such side effects for distribution to patients;
- the product could become less competitive;
- a strategic collaborator for the product may choose to terminate its agreement and compromise our ability to commercialize such product in the collaborator's geography;
- we may be subject to fines, injunctions, or the imposition of civil or criminal penalties;
- we could be sued and held liable for harm caused to patients; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the particular product candidate, if approved, and could significantly harm our business, results of operations and prospects.

We may in the future conduct clinical trials for product candidates outside the United States, and the FDA and comparable foreign regulatory authorities may not accept data from such trials.

We currently expect, and may in the future choose, to conduct one or more clinical trials outside the United States, including in Europe. The acceptance of study data from clinical trials conducted outside the United States or another jurisdiction by the FDA or comparable foreign regulatory authority may be subject to certain conditions or may not be accepted at all. In cases where data from foreign clinical trials are intended to serve as the basis for marketing approval in the United States, the FDA will generally not approve the application on the

[Table of Contents](#)

basis of foreign data alone unless (i) the data are applicable to the U.S. population and U.S. medical practice; and (ii) the trials were performed by clinical investigators of recognized competence and pursuant to good clinical practice, or GCP, regulations. Additionally, the FDA's clinical trial requirements, including sufficient size of patient populations and statistical powering, must be met. Many foreign regulatory authorities have similar approval requirements. In addition, such foreign trials would be subject to the applicable local laws of the foreign jurisdictions where the trials are conducted. Results for our clinical trials may differ by jurisdiction as a result of varying standards of care or local restrictions on reimbursement from third-party payors for clinical trials, thereby affecting the willingness of the FDA or any comparable foreign regulatory authority to accept such data. There can be no assurance that the FDA or any comparable foreign regulatory authority will accept data from trials conducted outside of the United States or the applicable jurisdiction. If the FDA or any comparable foreign regulatory authority does not accept such data, it would result in the need for additional trials, which could be costly and time-consuming, and which may result in product candidates that we may develop not receiving approval for commercialization in the applicable jurisdiction.

If it is determined that companion diagnostics are needed, we may be unable to successfully develop companion diagnostics for biomarkers that enable patient selection, or experience significant delays in doing so, we may not realize the full commercial potential of our product candidates.

A key component of our strategy includes the use of diagnostic tools to guide patient selection of our product candidates. In some cases, a diagnostic tool may be commercially available, for example, on a tumor-profiling panel. If not already commercially available, we may be required to seek collaborations with diagnostic companies for the development of diagnostics for biomarkers associated with our product candidates. We may have difficulty in establishing or maintaining such development relationships, and we will face competition from other companies in establishing these collaborations. Furthermore, even if a diagnostic is commercially available, we may not be able to obtain reimbursement for its use without obtaining regulatory approval.

There are also several risks associated with biomarker identification and validation. We, in collaboration with any diagnostic partners, may not be able to identify predictive biomarkers or pharmacodynamic biomarkers for one or more of our programs. We may not be able to validate potential biomarkers (e.g., certain genomic alterations) or their functional relevance preclinically in relevant *in vitro* or *in vivo* models. Data analytics and information from databases that we rely on for identifying or validating some of our biomarker-target relationships may not accurately reflect potential patient populations or may be based on incorrect methodology. Potential biomarkers, even if validated preclinically, may not be functionally validated in human clinical trials.

If it is determined that companion diagnostics are needed, we may, in collaboration with these parties, be unable to successfully develop companion diagnostics for our product candidates, or experience delays in doing so, which may adversely affect the development of our product candidates. The development of companion diagnostic products requires a significant investment of working capital, and may not result in any future income. This could require us to raise additional funds, which could dilute our current investors or impact our ability to continue our operations in the future.

There are also risks associated with diagnostics that are commercially available, including that we may not have access to reliable supply for such diagnostics.

The failure to obtain required regulatory approvals for any companion diagnostic tests that may be required and that we may pursue may prevent or delay approval of our product candidates. Moreover, the commercial success of any of our product candidates may be tied to the regulatory approval, market acceptance and continued availability of a companion diagnostic.

The FDA and other comparable regulatory authorities regulate *in vitro* companion diagnostics as medical devices that will likely be subject to clinical trials in conjunction with the clinical trials for our product candidates, and which will require regulatory clearance or approval prior to commercialization. If it is

determined that companion diagnostics are needed, we plan to collaborate with third parties for the development, testing and manufacturing of these companion diagnostics, the application for and receipt of any required regulatory clearances or approvals, and the commercial supply of these companion diagnostics. Our third-party collaborators may fail to obtain the required regulatory clearances or approvals, which could prevent or delay approval of our product candidates. In addition, the commercial success of any of our product candidates may be tied to and dependent upon the receipt of required regulatory clearances or approvals of the companion diagnostic.

For example, ATM is a common cancer mutation and its prognostic significance has not been validated for the patient populations that we are targeting. Such development risk contributes to the costs that we may need to bear in validating the ATM as well as the optimal method of diagnostic screening for our clinical trial populations.

Even if a companion diagnostic is approved, we will rely on the continued ability of any third-party collaborator to make the companion diagnostic commercially available to us on reasonable terms in the relevant geographies. Market acceptance of the companion diagnostic may be low as a result of the cost and complexity of utilizing such companion diagnostic. Furthermore, if commercial tumor profiling panels are not able to be updated to include additional tumor-associated genes, or if clinical oncologists do not incorporate molecular or genetic sequencing into their clinical practice, we may not be successful in developing or commercializing our existing product candidates or any future product candidates.

We intend to pursue the development of certain of our product candidates in combination with other therapies, and regulatory approval, safety or supply issues with these other therapies may delay or prevent the development and approval of our product candidates.

We intend to pursue the development of RP-3500 as a monotherapy and in combination with approved PARP inhibitors. In the near future, we may explore the use of our product candidates in combination with other therapies, including those that are not yet approved. If we choose to develop a product candidate for use in combination with an approved therapy, we are subject to the risk that the FDA or comparable foreign regulatory authorities could revoke approval of, or that safety, efficacy, manufacturing or supply issues could arise with, the therapy used in combination with our product candidate. If the therapies we use in combination with our product candidates are replaced as the standard of care, the FDA or comparable foreign regulatory authorities may require us to conduct additional clinical trials, or we may not be able to obtain adequate reimbursement from third-party payors. The occurrence of any of these risks could result in our product candidates, if approved, being removed from the market or being less successful commercially.

Where we develop a product candidate for use in combination with a therapy that has not been approved by the FDA or comparable foreign regulatory authorities, we will not be able to market our product candidate for use in combination with such an unapproved therapy, unless and until the unapproved therapy receives regulatory approval. These unapproved therapies face the same risks described with respect to our product candidates currently in development, including serious adverse effects and delays in their clinical trials. In addition, other companies may also develop their products or product candidates in combination with the unapproved therapies with which we are developing our product candidates for use in combination. Any setbacks in these companies' clinical trials, including the emergence of serious adverse effects, may delay or prevent the development and approval of our product candidates.

If the FDA or comparable foreign regulatory authorities do not approve or revoke their approval of, or if safety, efficacy, manufacturing, or supply issues arise with, therapies we choose to evaluate in combination with any of our product candidates, we may be unable to obtain regulatory approval of or to commercialize such product candidates in combination with these therapies.

Risks Related to the Commercialization of Our Product Candidates

We have never commercialized a product candidate and may experience delays or unexpected difficulties in obtaining regulatory approval for our current or future product candidates for our initial or potential additional indications.

We have never obtained regulatory approval for, or commercialized, a drug. It is possible that the FDA may refuse to accept any or all of our planned NDAs for substantive review or may conclude after review of our data that our application is insufficient to obtain regulatory approval for any product candidates. If the FDA does not approve any of our planned NDAs, it may require that we conduct additional costly clinical, nonclinical or manufacturing validation studies before it will reconsider our applications. Depending on the extent of these or any other FDA-required studies, approval of any NDA or other application that we submit may be significantly delayed, possibly for several years, or may require us to expend more resources than we have available. Any failure or delay in obtaining regulatory approvals would prevent us from commercializing our current or future product candidates, generating revenues and achieving and sustaining profitability. It is also possible that additional studies, if performed and completed, may not be considered sufficient by the FDA to approve any NDA or other application that we submit. If any of these outcomes occur, we may be forced to abandon the development of our product candidates, which would materially adversely affect our business and could potentially cause us to cease operations. We face similar risks for our applications in foreign jurisdictions.

We currently have no marketing and sales organization and have no experience as a company in marketing 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, we may not be able to generate product revenue.

We currently have no sales, marketing or distribution capabilities 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 arrangements with third-party sales, marketing, and distribution collaborators regarding the sales and marketing of our products, if approved. However, there can be no assurance that we will be able to establish or maintain such arrangements on favorable terms or if at all, or if we are able to do so, that these third-party arrangements will provide effective sales forces or marketing and distribution capabilities. 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.

Due to our limited resources and access to capital, we must, and have in the past decided to, prioritize development of certain product candidates over other potential product candidates. These decisions may prove to have been wrong and may adversely affect our ability to develop our own programs, our attractiveness as a commercial partner and may ultimately have an impact on our commercial success.

Because we have limited resources and access to capital to fund our operations, we must decide which product candidates to pursue and the amount of resources to allocate to each. Our decisions concerning the allocation of research, collaboration, management and financial resources toward particular proprietary molecules in our library, product candidates or therapeutic areas may not lead to the development of viable

[Table of Contents](#)

commercial products and may divert resources away from better opportunities. Similarly, our decisions to delay, terminate or collaborate with third parties in respect of certain product development programs may also prove not to be optimal and could cause us to miss valuable opportunities. If we make incorrect determinations regarding the market potential of our product candidates or misread trends in the biopharmaceutical industry, in particular for our lead product candidate, our business, financial condition and results of operations could be materially adversely affected.

Even if we obtain regulatory approval of our product candidates, the products may not gain market acceptance among physicians, patients, hospitals, cancer treatment centers and others in the medical community.

The use of precision medicines as a potential cancer treatment is a recent development and may not become broadly accepted by physicians, patients, hospitals, cancer treatment centers and others in the medical community. Various factors will influence whether our product candidates are accepted in the market, including:

- the clinical indications for which our product candidates are approved;
- physicians, hospitals, cancer treatment centers and patients considering our product candidates as a safe and effective treatment;
- the potential and perceived advantages of our product candidates over current or future alternative treatments;
- our ability to demonstrate the advantages of our product candidates over other cancer medicines;
- the prevalence and severity of any side effects;
- the prevalence and severity of any side effects for other precision medicines and public perception of other precision medicines;
- product labeling or product insert requirements of the FDA or comparable foreign regulatory authorities;
- limitations or warnings contained in the labeling approved by the FDA or comparable foreign regulatory authorities;
- the timing of market introduction of our product candidates as well as competitive products;
- the cost of treatment, including with respect to diagnostic tools for our product candidates, and the availability of testing for patient selection;
- the pricing of our products, if approved, and the availability of adequate coverage and reimbursement by third-party payors and government authorities;
- the willingness of patients to pay out-of-pocket in the absence of coverage by third-party payors and government authorities;
- relative convenience and ease of administration, including as compared to alternative treatments and competitive therapies; and
- the effectiveness of our sales and marketing efforts.

If our product candidates are approved for commercialization but fail to achieve market acceptance among physicians, patients, hospitals, cancer treatment centers or others in the medical community, we will not be able to generate significant revenue.

In addition, although our product candidates differ in certain ways from other precision medicine approaches, serious adverse events or deaths in other clinical trials involving precision medicines, even if not ultimately attributable to our product or product candidates, could result in increased government regulation,

[Table of Contents](#)

unfavorable public perception and publicity, potential regulatory delays in the testing or licensing of our product candidates, stricter labeling requirements for those product candidates that are licensed, and a decrease in demand for any such product candidates.

Even if our products achieve market acceptance, we may not be able to maintain that market acceptance over time if new products or technologies are introduced that are more favorably received than our products, are more cost effective or render our products obsolete.

The market opportunities for our product candidates may be relatively small as it will be limited to those patients who are ineligible for or have failed prior treatments and our estimates of the prevalence of our target patient populations may be inaccurate.

Cancer therapies are sometimes characterized as first line, second line, or third line, and the FDA often approves new therapies initially only for a particular line of use. When cancer is detected early enough, first line therapy is sometimes adequate to cure the cancer or prolong life without a cure. Whenever first line therapy, usually chemotherapy, antibody drugs, tumor-targeted small molecules, hormone therapy, radiation therapy, surgery, or a combination of these, proves unsuccessful, second line therapy may be administered. Second line therapies often consist of more chemotherapy, radiation, antibody drugs, tumor-targeted small molecules, or a combination of these. Third line therapies can include chemotherapy, antibody drugs and small molecule tumor-targeted therapies, more invasive forms of surgery and new technologies. We expect to initially seek approval of our product candidates in most instances at least as a second or third line therapy. Subsequently, for those product candidates that prove to be sufficiently safe and beneficial, if any, we would expect to seek approval as a second line therapy and potentially as a first line therapy, but there is no guarantee that our product candidates, even if approved as a second or third or subsequent line of therapy, would be approved for an earlier line of therapy, and, prior to any such approvals, we may have to conduct additional clinical trials.

We rely on various sources, including published literature and public or proprietary databases, to ascertain an estimate of the number of patients having particular genomic alterations, such as mutations, deletions or fusions. The determinable prevalence may vary depending on the source and quality of the underlying data and in some cases, insufficient data or poorly curated data may impact our ability to accurately estimate the prevalence of our target patient populations for each indication and in the aggregate across multiple indications both in the clinical trial setting, as well as in the commercial setting, if our product is approved. If the market opportunities for our product candidates are smaller than we estimate, our business, financial position, results of operations and prospects may be harmed. In addition, upon treatment with our product candidates, patients may have or develop resistance to our product candidates, reducing the addressable patient population and duration of treatment.

We face substantial competition, which may result in others developing or commercializing drugs before or more successfully than us.

The biopharmaceutical industry is characterized by intense competition and rapid innovation. Our competitors may be able to develop other compounds or drugs that are able to achieve similar or better results. Our potential competitors include major multinational pharmaceutical companies, established biotechnology companies, specialty pharmaceutical companies and universities and other research institutions. Many of our competitors have substantially greater financial, technical and other resources, such as larger research and development staff and experienced marketing and manufacturing organizations and well-established sales forces. Smaller or early-stage companies may also prove to be significant competitors, particularly as they develop novel approaches to treating disease indications that our product candidates are also focused on treating. Established pharmaceutical companies may also invest heavily to accelerate discovery and development of novel therapeutics or to in-license novel therapeutics that could make the product candidates that we develop obsolete. Mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated in our competitors. Competition may increase further as a result of advances in the commercial applicability of technologies and greater availability of capital for investment in these industries. Our

[Table of Contents](#)

competitors, either alone or with collaborative partners, may succeed in developing, acquiring or licensing on an exclusive basis drug or biologic products that are more effective, safer, more easily commercialized or less costly than our product candidates or may develop proprietary technologies or secure patent protection that we may need for the development of our technologies and products. We believe the key competitive factors that will affect the development and commercial success of our product candidates are efficacy, safety, tolerability, reliability, convenience of use, price and reimbursement.

We face competition from segments of the pharmaceutical, biotechnology and other related markets that pursue the development of precision oncology therapies for patients with genetically-defined cancers. Several biopharmaceutical companies, including Loxo Oncology, Inc. (recently acquired by Eli Lilly and Company), Blueprint Medicines Corporation, Agios Pharmaceuticals, Inc., SpringWorks Therapeutics, Inc., Black Diamond Therapeutics, Inc., Deciphera Pharmaceuticals, Inc. and Turning Point Therapeutics, Inc., are developing precision oncology medicines. In addition, we may face competition from companies developing product candidates that are based on SL, including AstraZeneca, GlaxoSmithKline, Pfizer, Bayer, Merck Serono, Artios Pharma Ltd. and IDEAYA Biosciences, Inc.

We anticipate that we will continue to face intense and increasing competition as new treatments enter the market and advanced technologies become available. There can be no assurance that our competitors are not currently developing, or will not in the future develop, products that are equally or more effective or are more economically attractive than any of our current or future product candidates. Competing products may gain faster or greater market acceptance than our products, if any, and medical advances or rapid technological development by competitors may result in our product candidates becoming non-competitive or obsolete before we are able to recover our research and development and commercialization expenses. If we or our product candidates do not compete effectively, it may have a material adverse effect on our business, financial condition and results of operations.

If we obtain approval to commercialize any products outside of the United States, a variety of risks associated with international operations could adversely affect our business.

If any of our product candidates are approved for commercialization, we may seek to enter into agreements with third parties to market them in certain jurisdictions outside the United States. We expect that we would be subject to additional risks related to international pharmaceutical operations, including:

- different regulatory requirements for drug approvals and rules governing drug commercialization in foreign countries;
- reduced protection for intellectual property rights;
- foreign reimbursement, pricing and insurance regimes;
- unexpected changes in tariffs, trade barriers and regulatory requirements;
- economic weakness, including inflation, or political instability in particular foreign economies and markets;
- foreign currency fluctuations, which could result in increased operating expenses and reduced revenues, and other obligations incident to doing business in another country;
- business interruptions resulting from geopolitical actions, including war and terrorism, natural disasters including earthquakes, typhoons, floods and fires, or from economic or political instability, or public health emergencies, such as the novel COVID-19 coronavirus and related shelter-in-place orders, travel, social distancing and quarantine policies, boycotts, curtailment of trade and other business restrictions;
- greater difficulty with enforcing our contracts;

[Table of Contents](#)

- potential noncompliance with the U.S. Foreign Corrupt Practices Act, the U.K. Bribery Act 2010 and similar anti-bribery and anticorruption laws in other jurisdictions; and
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad.

As an organization, we have no prior experience in these areas. In addition, there are complex regulatory, tax, labor and other legal requirements imposed by individual countries in Europe with which we may need to comply. If we are unable to successfully manage the challenges of international expansion and operations, our business and operating results could be harmed.

Coverage and adequate reimbursement may not be available for RP-3500 or any future product candidates, which could make it difficult for us to sell profitably or at all, if approved.

Market acceptance and sales of any product candidates that we commercialize, if approved, will depend in part on the extent to which reimbursement for these drugs and related treatments will be available from third-party payors, including government health administration authorities, managed care organizations and other private health insurers. Third-party payors decide which therapies they will pay for and establish reimbursement levels. Reimbursement by a third-party payor may depend upon a number of factors, including, but not limited to, the third-party payor's determination that use of a product is:

- a covered benefit under its health plan;
- safe, effective and medically necessary;
- appropriate for the specific patient;
- cost-effective; and
- neither experimental nor investigational.

While no uniform policy for coverage and reimbursement exists in the United States, third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own coverage and reimbursement policies. However, decisions regarding the extent of coverage and amount of reimbursement to be provided for any product candidates that we develop will be made on a payor-by-payor basis. Therefore, one payor's determination to provide coverage for a drug does not assure that other payors will also provide coverage, and adequate reimbursement, for the drug. Additionally, a third-party payor's decision to provide coverage for a therapy does not imply that an adequate reimbursement rate will be approved. Each payor determines whether or not it will provide coverage for a therapy, what amount it will pay the manufacturer for the therapy, and on what tier of its formulary it will be placed. The position on a payor's list of covered drugs, or formulary, generally determines the co-payment that a patient will need to make to obtain the therapy and can strongly influence the adoption of such therapy by patients and physicians. Patients who are prescribed treatments for their conditions and providers prescribing such services generally rely on third-party payors to reimburse all or part of the associated healthcare costs. Patients are unlikely to use our products unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of our products.

Third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. We cannot be sure that coverage and reimbursement will be available for any drug that we commercialize and, if reimbursement is available, what the level of reimbursement will be. Inadequate coverage and reimbursement may impact the demand for, or the price of, any drug for which we obtain marketing approval. Additionally, we or our collaborators may develop companion diagnostic tests for use with our product candidates. 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 products, will apply to companion diagnostics. If coverage and adequate reimbursement are not available, or are available only to limited levels, we may not be able to successfully commercialize RP-3500 or any future product candidates that we develop.

[Table of Contents](#)

Even if we are successful in obtaining regulatory approval, commercial success of any approved products will also depend in large part on the availability of insurance coverage and adequate reimbursement from third-party payors, including government payors, such as the Medicare and Medicaid programs, and managed care organizations, which may be affected by existing and future healthcare reform measures designed to reduce the cost of healthcare. Third-party payors could require us to conduct additional studies, including post-marketing studies related to the cost-effectiveness of a product, to qualify for reimbursement, which could be costly and divert our resources. If government and other healthcare payors were not to provide adequate insurance coverage and reimbursement levels for one any of our products once approved, market acceptance and commercial success would be limited.

We may become exposed to costly and damaging liability claims, either when testing our product candidates in the clinic or at the commercial stage, and our product liability insurance may not cover all damages from such claims.

We are exposed to potential product liability and professional indemnity risks that are inherent in the research, development, manufacturing, marketing and use of biopharmaceutical products. Currently, we have no products that have been approved for commercial sale; however, the current and future use of product candidates by us and our collaborators in clinical trials, and the potential sale of any approved products in the future, may expose us to liability claims. These claims might be made by patients who use the product, healthcare providers, pharmaceutical companies, our collaborators or others selling such products. Any claims against us, regardless of their merit, could be difficult and costly to defend and could materially adversely affect the market for our product candidates or any prospects for commercialization of our product candidates. Although the clinical trial process is designed to identify and assess potential side effects, it is always possible that a product, even after regulatory approval, may exhibit unforeseen side effects. If any of our product candidates were to cause adverse side effects during clinical trials or after approval of the product candidate, we may be exposed to substantial liabilities. Physicians and patients may not comply with any warnings that identify known potential adverse effects and patients who should not use our product candidates. Regardless of the merits or eventual outcome, liability claims may result in:

- decreased demand for our products due to negative public perception;
- injury to our reputation;
- withdrawal of clinical trial participants or difficulties in recruiting new trial participants;
- initiation of investigations by regulators;
- costs to defend or settle the related litigation;
- a diversion of management's time and our resources;
- substantial monetary awards to trial participants or patients;
- product recalls, withdrawals or labeling, marketing or promotional restrictions;
- loss of revenues from product sales; and
- the inability to commercialize any of our product candidates, if approved.

Although we believe we maintain adequate product liability insurance for our product candidates, it is possible that our liabilities could exceed our insurance coverage. We intend to expand our insurance coverage to include the sale of commercial products if we obtain marketing approval for any of our product candidates. However, we may not be able to maintain insurance coverage at a reasonable cost or obtain insurance coverage that will be adequate to satisfy any liability that may arise. If a successful product liability claim or series of claims is brought against us for uninsured liabilities or in excess of insured liabilities, our assets may not be sufficient to cover such claims and our business operations could be impaired.

Should any of the events described above occur, this could have a material adverse effect on our business, financial condition and results of operations.

Risks Related to Regulatory Matters

Even if we obtain FDA approval for any of our product candidates in the United States, we may never obtain approval for or commercialize any of them in any other jurisdiction, which would limit our ability to realize their full market potential.

In order to market any products in any particular jurisdiction, we must establish and comply with numerous and varying regulatory requirements on a country-by-country basis regarding safety and efficacy.

Approval by the FDA in the United States does not ensure approval by regulatory authorities in other countries or jurisdictions. However, the failure to obtain approval in one jurisdiction may negatively impact our ability to obtain approval elsewhere. In addition, clinical trials conducted in one country may not be accepted by regulatory authorities in other countries, and regulatory approval in one country does not guarantee regulatory approval in any other country.

Approval processes vary among countries and can involve additional product testing and validation and additional administrative review periods. Seeking foreign regulatory approval could result in difficulties and increased costs for us and require additional preclinical studies or clinical trials which could be costly and time consuming. Regulatory requirements can vary widely from country to country and could delay or prevent the introduction of our products in those countries. We do not have any product candidates approved for sale in any jurisdiction, including in 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, or if regulatory approvals in international markets are delayed, our target market will be reduced and our ability to realize the full market potential of any product we develop will be unrealized.

Even if we receive regulatory approval of any product candidates, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense, and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our product candidates.

If any of our product candidates are approved, they will be subject to ongoing regulatory requirements for manufacturing, labeling, packaging, storage, advertising, promotion, sampling, record-keeping, conduct of post-marketing studies and submission of safety, efficacy and other post-market information, including both federal and state requirements in the United States and requirements of comparable foreign regulatory authorities. In addition, we will be subject to continued compliance with cGMP and GCP requirements for any clinical trials that we conduct post-approval.

Manufacturers and manufacturers' facilities are required to comply with extensive FDA and comparable foreign regulatory authority requirements, including ensuring that quality control and manufacturing procedures conform to cGMP regulations. As such, 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, other marketing application, and previous responses to inspection observations. Accordingly, we and others with whom we work must continue to expend time, money, and effort in all areas of regulatory compliance, including manufacturing, production and quality control.

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 to the conditions of approval, or contain requirements for potentially costly post-marketing testing, including Phase 4 clinical trials and surveillance to

[Table of Contents](#)

monitor the safety and efficacy of the product candidate. The FDA may also require a REMS program as a condition of approval of our product candidates, which could entail requirements for long-term patient follow-up, a medication guide, physician communication plans or additional elements to ensure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. Comparable foreign regulatory authorities may also have programs similar to REMS. In addition, if the FDA or a comparable foreign regulatory authority approves our product candidates, we will have to comply with requirements including submissions of safety and other post-marketing information and reports and registration.

The FDA may impose consent decrees or withdraw 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 our product candidates, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical trials to assess new safety risks; or imposition of distribution restrictions or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of our products, withdrawal of the product from the market or voluntary or mandatory product recalls;
- fines, warning letters or holds on clinical trials;
- refusal by the FDA to approve pending applications or supplements to approved applications filed by us or suspension or revocation of license approvals;
- product seizure or detention or refusal to permit the import or export of our product candidates; and
- injunctions or the imposition of civil or criminal penalties.

The FDA strictly regulates marketing, labeling, advertising, and promotion of products that are placed on the market. Products may be promoted only for the approved indications and in accordance with the provisions of the approved label. 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. However, physicians may, in their independent medical judgment, prescribe legally available products for off-label uses. The FDA does not regulate the behavior of physicians in their choice of treatments but the FDA does restrict manufacturer's communications on the subject of off-label use of their products. The policies of the FDA and of comparable foreign regulatory authorities may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability.

Our relationships with customers, physicians, and third-party payors are subject, directly or indirectly, to federal and state healthcare fraud and abuse laws, false claims laws, health information privacy and security laws, and other healthcare laws and regulations. If we are unable to comply, or have not fully complied, with such laws, we could face substantial penalties.

Healthcare providers, physicians and third-party payors in the United States and elsewhere will play a primary role in the recommendation and prescription of any product candidates for which we obtain marketing approval. Our current and future arrangements with healthcare professionals, principal investigators, consultants, customers and third-party payors subject us to various federal and state fraud and abuse laws and other healthcare

[Table of Contents](#)

laws that may constrain the business or financial arrangements and relationships through which we research, sell, market, and distribute our product candidates, if we obtain marketing approval. Such laws include:

- the U.S. federal Anti-Kickback Statute, which prohibits, among other things, persons or entities from knowingly and willfully soliciting, offering, receiving or providing any remuneration (including any kickback, bribe, or certain rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, lease, order or recommendation of, any good, facility, item or service, for which payment may be made, in whole or in part, under U.S. federal and state healthcare programs such as Medicare and Medicaid. 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 U.S. federal civil and criminal false claims laws, including the civil False Claims Act, which can be enforced by private individuals on behalf of the government through civil whistleblower or qui tam actions, and civil monetary penalties laws prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, to the U.S. federal government, claims for payment or approval that are false or fraudulent, knowingly making, using or causing to be made or used, a false record or statement material to a false or fraudulent claim, or from knowingly making a false statement to avoid, decrease or conceal an obligation to pay money to the U.S. federal government. Manufacturers can be held liable under the False Claims Act even when they do not submit claims directly to government payors if they are deemed to “cause” the submission of false or fraudulent claims. In addition, the government may assert that a claim including items and services resulting from a violation of the U.S. federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the civil False Claims Act;
- the U.S. federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created additional federal civil and criminal liability for, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, or knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement, in connection with the delivery of, or payment for, healthcare benefits, items or services. Similar to the U.S. 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;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their implementing regulations, which impose certain obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information without appropriate authorization by covered entities subject to the rule, such as health plans, healthcare clearinghouses and certain healthcare providers as well as their business associates, independent contractors of a covered entity that perform certain services involving the use or disclosure of individually identifiable health information. HITECH also created new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys’ fees and costs associated with pursuing federal civil actions;
- the Federal Food, Drug, and Cosmetic Act, which prohibits, among other things, the adulteration or misbranding of drugs, biologics and medical devices;
- the U.S. Public Health Service Act, which prohibits, among other things, the introduction into interstate commerce of a biological product unless a biologics license is in effect for that product;
- the U.S. Physician Payments Sunshine Act and its implementing regulations, which require certain manufacturers of drugs, devices, biologics and medical supplies that are reimbursable under Medicare, Medicaid, or the Children’s Health Insurance Program, with specific exceptions, to report annually to the Centers for Medicare & Medicaid Services, or CMS, information related to certain payments and

other transfers of value to physicians (currently defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members. Effective January 1, 2022, these reporting obligations will extend to include transfers of value made, as well as ownership and investment interests held, during the previous year to certain non-physician providers such as physician assistants and nurse practitioners;

- analogous U.S. state laws and regulations, including: state anti-kickback and false claims laws, which may apply to our business practices, including but not limited to, research, distribution, sales and marketing arrangements and claims involving healthcare items or services reimbursed by any third-party payor, 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 U.S. federal government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws and regulations that require drug manufacturers to file reports relating to drug pricing and marketing information, which requires tracking gifts and other remuneration and items of value provided to healthcare professionals and entities; state and local laws that require the registration of pharmaceutical sales representatives; and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts; and
- analogous laws in other jurisdictions including, but not limited to, laws relating to interactions with government officials, privacy laws, transparency laws, laws relating to reimbursement, competition, consumer protection laws, laws relating to the marketing of health products and other healthcare-related laws.

In addition, we are also subject to federal and state consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm customers.

Ensuring that our business arrangements with third parties comply with applicable healthcare laws and regulations will likely be costly. It is possible that governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, exclusion from participating in government funded healthcare programs, such as Medicare and Medicaid, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, contractual damages, reputational harm and the curtailment or restructuring of our operations.

If the physicians or other providers or entities with whom we expect to do business are found not to be in compliance with applicable laws, they may be subject to significant criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs. Even if resolved in our favor, litigation or other legal proceedings relating to healthcare laws and regulations may cause us to incur significant expenses and could distract our technical and management personnel from their normal responsibilities. In addition, there could 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 a substantial adverse effect on the price of our common shares. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development, manufacturing, sales, marketing or distribution activities. Uncertainties resulting from the initiation and continuation of litigation or other proceedings relating to applicable healthcare laws and regulations could have a material adverse effect on our ability to compete in the marketplace.

Enacted and future healthcare legislation may increase the difficulty and cost for us to progress our clinical programs and obtain marketing approval of and commercialize our product candidates and may affect the prices we may set.

In the United States and other jurisdictions, there have been, and we expect there will continue to be, a number of legislative and regulatory changes and proposed changes to the healthcare system that could affect our future results of operations. In particular, there have been and continue to be a number of initiatives at the U.S. federal and state levels that seek to reduce healthcare costs and improve the quality of healthcare. For example, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or collectively the ACA, was enacted, which substantially changed the way healthcare is financed by both governmental and private insurers. Among the provisions of the ACA, those of greatest importance to the pharmaceutical and biotechnology industries include the following:

- an annual, non-deductible fee payable by any entity that manufactures or imports certain branded prescription drugs and biologic agents (other than those designated as orphan drugs), which is apportioned among these entities according to their market share in certain government healthcare programs;
- 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;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to certain individuals with income at or below 133% of the federal poverty level, thereby potentially increasing a manufacturer's Medicaid rebate liability;
- a licensure framework for follow on biologic products;
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research; and
- establishment of a Center for Medicare & Medicaid Innovation at CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending.

There remain judicial, Congressional and executive branch challenges to certain aspects of the ACA, and we expect there will be additional challenges and amendments to the ACA in the future. While Congress has not passed comprehensive repeal legislation, it has enacted laws that modify certain provisions of the ACA such as removing penalties, starting January 1, 2019, for not complying with the ACA's individual mandate to carry health insurance and increasing the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D. Further, the 2020 federal spending package permanently eliminated, effective January 1, 2020, the ACA-mandated "Cadillac" tax on high-cost employer-sponsored health coverage and medical device tax and, effective January 1, 2021, also eliminates the health insurer tax. On December 14, 2018, a U.S. District Court Judge in Texas ruled that the ACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress as part of the legislation enacted in 2017, informally titled the Tax Cuts and Jobs Act, or the Tax Act. Additionally, on December 18, 2019, the U.S. Court of Appeals for the 5th Circuit ruled that the individual mandate was unconstitutional and remanded the case back to the District Court to determine whether the remaining provisions of the ACA are invalid as well. On March 2, 2020, the United States Supreme Court granted the petitions for writs of certiorari to review this case and has allotted one hour for oral arguments. It is unclear when such oral arguments are to be held and when a decision is expected to be made. It is also unclear how such litigation and other efforts to repeal and replace the ACA will impact the ACA and our business.

In addition, other legislative changes have been proposed and adopted in the United States since the ACA was enacted. In August 2011, the Budget Control Act of 2011, among other things, led to aggregate reductions of Medicare payments to providers of 2% per fiscal year. These reductions went into effect in April 2013 and, due to subsequent legislative amendments to the statute will remain in effect through 2030 unless additional action is

[Table of Contents](#)

taken by Congress. These Medicare sequester reductions will be suspended from May 1, 2020 through December 31, 2020 due to the COVID-19 pandemic. In January 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several types of providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. These new laws or any other similar laws introduced in the future may result in additional reductions in Medicare and other health care funding, which could negatively affect our customers and accordingly, our financial operations.

Moreover, payment methodologies may be subject to changes in healthcare legislation and regulatory initiatives. For example, CMS may develop new payment and delivery models, such as bundled payment models. In addition, recently there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several U.S. Congressional inquiries and proposed and enacted federal legislation designed to, among other things, bring more transparency to drug pricing, reduce the cost of prescription drugs under Medicare, and review the relationship between pricing and manufacturer patient programs. The Trump administration's budget proposal for fiscal year 2021 includes a \$135 billion allowance to support legislative proposals seeking to reduce drug prices, increase competition, lower out-of-pocket drug costs for patients, and increase patient access to lower-cost generic and biosimilar drugs. On March 10, 2020, the Trump administration sent "principles" for drug pricing to Congress, calling for legislation that would, among other things, cap Medicare Part D beneficiary out-of-pocket pharmacy expenses, provide an option to cap Medicare Part D beneficiary monthly out-of-pocket expenses, and place limits on pharmaceutical price increases. On May 11, 2018, President Trump laid out his administration's "Blueprint" to lower drug prices and reduce out-of-pocket costs of prescription drugs that contained proposals to increase manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products and reduce the out of pocket costs of drug products paid by consumers. The Department of Health and Human Services, or HHS, has solicited feedback on some of these measures and has implemented others under its existing authority. For example, in May 2019, CMS 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 CMS's policy change that was effective January 1, 2019. Although some of these and other measures may require additional authorization through to become effective, Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. We expect that additional U.S. federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that the U.S. federal government will pay for healthcare products and services, which could result in reduced demand for our product candidates or additional pricing pressures.

On May 30, 2018, the Right to Try Act was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational new drug products that have completed a Phase 1 clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA permission under the FDA expanded access program. There is no obligation for a drug manufacturer to make its drug products available to eligible patients as a result of the Right to Try Act, but the manufacturer must develop an internal policy and respond to patient requests according to that policy.

Individual states in the United States have also increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological 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. Legally mandated price controls on payment amounts by third-party payors or other restrictions could harm our business, results of operations, financial condition and prospects. In addition, regional healthcare authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other healthcare programs. This could reduce the ultimate demand for our product candidates or put pressure on our product pricing.

[Table of Contents](#)

In markets outside of the United States, reimbursement and healthcare payment systems vary significantly by country, and many countries have instituted price ceilings on specific products and therapies. The price control regulations outside of the United States can have a significant impact on the profitability of a given market, and further uncertainty is introduced if and when these laws change. For example, in Canada, price control legislation for patented medicines is currently undergoing significant change that may have significant effects on profitability in Canada.

We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action in the United States or any other jurisdiction. It is possible that additional governmental action is taken to address the COVID-19 pandemic. If we or any third parties we may engage are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we or such third parties are not able to maintain regulatory compliance, our product candidates may lose any regulatory approval that may have been obtained and we may not achieve or sustain profitability.

We may face potential liability if we obtain identifiable patient health information from clinical trials sponsored by us.

Most healthcare providers, including certain research institutions from which we may obtain patient health information, are subject to privacy and security regulations promulgated under HIPAA, as amended by the HITECH. We are not currently classified as a covered entity or business associate under HIPAA and thus are not directly subject to its requirements or penalties. However, any person may be prosecuted under HIPAA's criminal provisions either directly or under aiding-and-abetting or conspiracy principles. Consequently, depending on the facts and circumstances, we could face substantial criminal penalties if we knowingly receive individually identifiable health information from a HIPAA-covered healthcare provider or research institution that has not satisfied HIPAA's requirements for disclosure of individually identifiable health information. In addition, in the future, we may maintain sensitive personally identifiable information, including health information, that we receive throughout the clinical trial process, in the course of our research collaborations, and directly from individuals (or their healthcare providers) who may enroll in patient assistance programs if we choose to implement such programs. As such, we may be subject to state laws requiring notification of affected individuals and state regulators in the event of a breach of personal information, which is a broader class of information than the health information protected by HIPAA.

The EU General Data Protection Regulation, or GDPR, also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies, and obtain compensation for damages resulting from violations of the GDPR. In addition, the GDPR includes restrictions on cross-border data transfers. The GDPR may increase our responsibility and liability in relation to personal data that we process where such processing is subject to the GDPR, and we may be required to put in place additional mechanisms to ensure compliance with the GDPR, including as implemented by individual countries. Compliance with the GDPR will be a rigorous and time-intensive process that may increase our cost of doing business or require us to change our business practices, and despite those efforts, there is a risk that we may be subject to fines and penalties, litigation, and reputational harm in connection with our European activities. Further, the United Kingdom's decision to leave the European Union, referred to as Brexit, has created uncertainty with regard to data protection regulation in the United Kingdom. In particular, it is unclear how data transfers to and from the United Kingdom will be regulated now that the United Kingdom has left the European Union.

Furthermore, certain health privacy laws, data breach notification laws, consumer protection laws and genetic testing laws may apply directly to our operations and/or those of our collaborators and may impose restrictions on our collection, use and dissemination of individuals' health information. Patients about whom we or our collaborators may obtain health information, as well as the providers who may share this information with us, may have statutory or contractual rights that limit our ability to use and disclose the information. We may be required to expend significant capital and other resources to ensure ongoing compliance with applicable privacy

[Table of Contents](#)

and data security laws. Claims that we have violated individuals' privacy rights or breached our contractual obligations, even if we are not found liable, could be expensive and time-consuming to defend and could result in adverse publicity that could harm our business.

If we or third-party CMOs, CROs or other contractors or consultants fail to comply with applicable federal, state/provincial or local regulatory requirements, we could be subject to a range of regulatory actions that could affect our or our contractors' ability to develop and commercialize our therapeutic candidates and could harm or prevent sales of any affected therapeutics that we are able to commercialize, or could substantially increase the costs and expenses of developing, commercializing and marketing our therapeutics. Any threatened or actual government enforcement action could also generate adverse publicity and require that we devote substantial resources that could otherwise be used in other aspects of our business. Increasing use of social media could give rise to liability, breaches of data security or reputational damage.

Additionally, we are subject to state and foreign equivalents of each of the healthcare laws described above, among others, some of which may be broader in scope and may apply regardless of the payor.

If we or our third-party manufacturers and suppliers fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could have a material adverse effect on the success of our business.

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. Our research and development activities involve the use of biological and hazardous materials and produce hazardous waste products. We generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination or injury from these materials, which could cause an interruption of our commercialization efforts, research and development efforts and business operations, environmental damage resulting in costly clean-up and liabilities under applicable laws and regulations governing the use, storage, handling and disposal of these materials and specified waste products. Although we believe that the safety procedures utilized by our third-party manufacturers for handling and disposing of these materials generally comply with the standards prescribed by these laws and regulations, we cannot guarantee that this is the case or eliminate the risk of accidental contamination or injury from these materials. In such an event, we may be held liable for any resulting damages and such liability could exceed our resources and state or federal or other applicable authorities may curtail our use of certain materials and/or interrupt our business operations. Furthermore, environmental laws and regulations are complex, change frequently and have tended to become more stringent. We cannot predict the impact of such changes and cannot be certain of our future compliance. In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. These current or future laws and regulations may impair our research, development or production efforts. Failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

Although we maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials or other work-related injuries, this insurance may not provide adequate coverage against potential liabilities. We do not carry specific biological waste or hazardous waste insurance coverage, workers compensation or property and casualty and general liability insurance policies that include coverage for damages and fines arising from biological or hazardous waste exposure or contamination.

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 export control and import laws and regulations, including 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 Controls, the U.S. Foreign Corrupt Practices Act of 1977, as amended, or FCPA, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act, and other state and national anti-bribery and anti-money laundering laws in the countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit companies and their employees, agents, contractors, and other collaborators from authorizing, promising, offering, or providing, directly or indirectly, improper payments or anything else of value to recipients in the public or private sector. We may engage third parties for clinical trials outside of the United States, to sell our products abroad once we enter a commercialization phase, and/or to obtain necessary permits, licenses, patent registrations, and other regulatory approvals. We may also 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 corrupt or other illegal activities of our employees, agents, contractors, and other collaborators, even if we do not explicitly authorize or have actual knowledge of such activities. Any violations 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, tax reassessments, breach of contract and fraud litigation, reputational harm, and other consequences.

Risks Related to Our Dependence on Third Parties

We rely, and expect to continue to rely, on third parties, including independent clinical investigators, contracted laboratories and CROs, to conduct our preclinical studies and clinical trials. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we may not be able to obtain regulatory approval for or commercialize our product candidates and our business could be substantially harmed.

We have relied upon and plan to continue to rely upon third parties, including independent clinical investigators, contracted laboratories and third-party CROs, to conduct our preclinical studies and clinical trials in accordance with applicable regulatory requirements and to monitor and manage data for our ongoing preclinical and clinical programs. We rely on these parties for execution of our preclinical studies and clinical trials, and control only certain aspects of their activities. Nevertheless, we are responsible for ensuring that each of our studies and trials is conducted in accordance with the applicable protocol, legal and regulatory requirements and scientific standards, and our reliance on these third parties does not relieve us of our regulatory responsibilities. We and our third party contractors and CROs are required to comply with good laboratory practices, or GLPs, as applicable, and GCP requirements, which are regulations and guidelines enforced by the FDA and comparable foreign regulatory authorities for all of our products in clinical development. Regulatory authorities enforce these GLPs and GCPs through periodic inspections of laboratories conducting GLP studies, trial sponsors, principal investigators and trial sites. If we, our investigators or any of our CROs or contracted laboratories fail to comply with applicable GLPs and GCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA or comparable foreign regulatory authorities may require us to perform additional preclinical studies or clinical trials before approving our marketing applications. We cannot assure you that upon inspection by a given regulatory authority, such regulatory authority will determine that any of our preclinical studies or clinical trials comply with applicable GLP or GCP regulations. In addition, our clinical trials must be conducted with product, including biologic product, produced in compliance with applicable cGMP regulations. Our failure to comply with these regulations may require us to repeat preclinical studies or clinical trials, which would delay the regulatory approval process.

[Table of Contents](#)

Further, these laboratories, investigators and CROs are not our employees and we will not be able to control, other than by contract, the amount of resources, including time, which they devote to our product candidates and clinical trials. If independent laboratories, investigators or CROs fail to devote sufficient resources to the development of our product candidates, or if their performance is substandard, it may delay or compromise the prospects for approval and commercialization of any product candidates that we develop. In addition, the use of third-party service providers requires us to disclose our proprietary information to these parties, which could increase the risk that this information will be misappropriated.

Our CROs have the right to terminate their agreements with us in the event of an uncured material breach. In addition, some of our CROs have an ability to terminate their respective agreements with us if we make a general assignment for the benefit of our creditors or if we are liquidated.

If any of our relationships with these third-party laboratories, CROs or clinical investigators terminate, we may not be able to enter into arrangements with alternative laboratories, CROs or investigators or to do so in a timely manner or on commercially reasonable terms. If laboratories, CROs or clinical investigators do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our preclinical or clinical protocols, regulatory requirements or for other reasons, our preclinical or clinical trials may be extended, delayed or terminated and we may not be able to obtain regulatory approval for or successfully commercialize our product candidates. As a result, our results of operations and the commercial prospects for our product candidates would be harmed, our costs could increase and our ability to generate revenues could be delayed.

Switching or adding additional laboratories or CROs (or investigators) involves additional cost and requires management time and focus. In addition, there is a natural transition period when a new laboratory or CRO commences work. As a result, delays occur, which can materially impact our ability to meet our desired clinical development timelines. Though we carefully manage our relationships with our contracted laboratories and CROs, there can be no assurance that we will not encounter similar challenges or delays in the future or that these delays or challenges will not have a material adverse impact on our business, financial condition and results of operations.

In addition, clinical investigators may serve as scientific advisors or consultants to us from time to time and may receive cash or equity compensation in connection with such services. If these relationships and any related compensation result in perceived or actual conflicts of interest, or the FDA concludes that the financial relationship may have affected the interpretation of the preclinical study or clinical trial, the integrity of the data generated at the applicable preclinical study or clinical trial site may be questioned and the utility of the preclinical study or clinical trial itself may be jeopardized, which could result in the delay or rejection by the FDA. Any such delay or rejection could prevent us from commercializing our clinical-stage product candidate or any future product candidates.

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

We do not currently have the infrastructure or capability internally to manufacture all our product candidates for use in the conduct of our preclinical studies and clinical trials or for commercial supply, if our products are approved. We rely on, and expect to continue to rely on, contract manufacturing organizations, or CMOs. Any replacement of our CMOs could require significant effort and expertise because there may be a limited number of qualified CMOs. This could be particularly problematic where we rely on a single-source supplier, as is currently the case for the manufacture of RP-3500. Reliance on third-party providers may expose

[Table of Contents](#)

us to more risk than if we were to manufacture our product candidates ourselves. We are dependent on our CMOs for the production of our product candidates in accordance with relevant regulations, such as cGMP, which includes, among other things, quality control, quality assurance and the maintenance of records and documentation. Moreover, many of the third parties with whom we contract may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting product development activities that could harm our competitive position.

Our third-party manufacturers may be subject to damage or interruption from, among other things, fire, natural or man-made disaster, disease outbreaks or public health pandemics, power loss, telecommunications failure, unauthorized entry, computer viruses, denial-of-service attacks, acts of terrorism, human error, vandalism or sabotage, financial insolvency, bankruptcy and similar events. For example, in December 2019, COVID-19 was reported to have surfaced in Wuhan, China. The extent to which COVID-19 may impact our manufacturing and supply chain as well as our results will depend on future developments, which are highly uncertain and cannot be predicted, including new information which may emerge concerning the severity of COVID-19 and the actions to contain COVID-19 or treat its impact, among others.

If we were to experience an unexpected loss of supply of or if any supplier were unable to meet our demand for any of our product candidates, we could experience delays in our research or planned clinical trials or commercialization. We could be unable to find alternative suppliers of acceptable quality, in the appropriate volumes who could meet our timelines at an acceptable cost. Moreover, our suppliers are often subject to strict manufacturing requirements and rigorous testing requirements, which could limit or delay production. The long transition periods necessary to switch manufacturers and suppliers, if necessary, could significantly delay our preclinical studies, our clinical trials and the commercialization of our products, if approved, which could materially adversely affect our business, financial condition and results of operation.

In complying with the applicable manufacturing regulations of the FDA and comparable foreign regulatory authorities, we and our third-party suppliers must spend significant time, money and effort in the areas of design and development, testing, production, record-keeping and quality control to assure that the products meet applicable specifications and other regulatory requirements. The failure to comply with these requirements could result in an enforcement action against us, including the seizure of products and shutting down of production. We and any of these third-party suppliers may also be subject to audits by the FDA and comparable foreign regulatory authorities. If any of our third-party suppliers fails to comply with cGMP or other applicable manufacturing regulations, our ability to develop and commercialize the products could suffer significant interruptions. We face risks inherent in relying on CMOs, as any disruption, such as a fire, natural hazards, vandalism or an outbreak of contagious disease affecting the CMO or any supplier of the CMO could significantly interrupt our manufacturing capability. In case of a disruption, we will have to establish alternative manufacturing sources. This would require substantial capital on our part, which we may not be able to obtain on commercially acceptable terms or at all. Additionally, we would likely experience months of manufacturing delays as the CMO builds or locates replacement facilities and seeks and obtains necessary regulatory approvals. If this occurs, we will be unable to satisfy manufacturing needs on a timely basis, if at all.

Our current and future collaborations will be important to our business. If we are unable to enter into new collaborations, or if these collaborations are not successful, our business could be adversely affected.

A part of our strategy is to strategically evaluate and, as deemed appropriate, enter into partnerships in the future when strategically attractive, including potentially with major biotechnology or pharmaceutical companies. We have limited capabilities for product development and do not yet have any capability for commercialization. Accordingly, we may enter into collaborations with other companies to provide us with important technologies and funding for our programs and technology. If we fail to enter into or maintain collaborations on reasonable terms or at all, our ability to develop our existing or future research programs and product candidates could be delayed, the commercial potential of our product could change and our costs of development and commercialization could increase. Furthermore, we may find that our programs require the use

[Table of Contents](#)

of intellectual property rights held by third parties, and the growth of our business may depend in part on our ability to acquire or in-license these intellectual property rights.

For example, we are currently party to a collaboration agreement with Ono Pharmaceutical Co., or Ono, pursuant to which we and Ono have agreed to collaborate in the research of potential product candidates targeting Polq and the development of our small molecule Polq inhibitor program. Similarly, in May 2020, we entered into a collaboration and license agreement with Bristol Myers Squibb pursuant to which we and Bristol Myers Squibb have agreed to collaborate in the research and development of potential new product candidates for the treatment of cancer. These and any future collaborations we enter into may pose a number of risks, including, but not limited to, the following:

- collaborators have significant discretion in determining the efforts and resources that they will apply;
- collaborators may not perform their obligations as expected;
- collaborators 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 or license arrangements based on clinical trial results, changes in the collaborators' strategic focus or available funding, or external factors, such as a strategic transaction that may divert resources or create competing priorities;
- collaborators 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;
- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our products and product candidates if the collaborators believe that the competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than ours;
- product candidates discovered in collaboration with us may be viewed by our collaborators as competitive with their own product candidates or products, which may cause collaborators to cease to devote resources to the commercialization of our product candidates;
- collaborators may fail to comply with applicable regulatory requirements regarding the development, manufacture, distribution or marketing of a product candidate or product;
- collaborators 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 or products;
- disagreements with collaborators, including disagreements over proprietary rights, contract interpretation or the preferred course of development, might cause delays or terminations 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;
- collaborators 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;
- collaborators may infringe the intellectual property rights of third parties, which may expose us to litigation and potential liability;
- if a collaborator of ours is involved in a business combination, the collaborator might deemphasize or terminate the development or commercialization of any product candidate licensed to it by us; and
- collaborations may be terminated by the collaborator, and, if terminated, we could be required to raise additional capital to pursue further development or commercialization of the applicable product candidates.

[Table of Contents](#)

If our collaborations do not result in the successful discovery, development and commercialization of product candidates or if one of our collaborators terminates its agreement with us, we may not receive any future research funding or milestone or royalty payments under such collaboration. Moreover, we may not receive all of the milestone or royalty payments we are entitled to receive under our current and future collaboration agreements. For example, pursuant to the terms of our collaboration and license agreement with Bristol Myers Squibb, we are entitled to receive up to \$301 million in total milestones per each program subject to the agreement. However, given the overlapping nature of the triggers for these milestone payments, as well as the uncertainty associated with achieving any of such milestones, it is unlikely that we will receive the entire \$301 million in milestone payments with respect to each program subject to the agreement. See “Business—Collaborations and License Agreements.”

All of the risks relating to product development, regulatory approval and commercialization described in this prospectus also apply to the activities of our therapeutic collaborators. Additionally, if one of our collaborators terminates its agreement with us, we may find it more difficult to attract new collaborators and our perception in the business and financial communities could be adversely affected.

We face significant competition in seeking appropriate collaborative partners. Our ability to reach a definitive agreement for a partnership will depend, among other things, upon an assessment of the collaborator’s resources and expertise, the terms and conditions of the proposed partnership and the proposed collaborator’s evaluation of a number of factors. These factors may include the design or results of preclinical studies or clinical trials, the likelihood of regulatory approval, 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 any uncertainty with respect to our ownership of technology (which can exist if there is a challenge to such ownership regardless of the merits of the challenge) and industry and market conditions generally. The collaborator may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a partnership could be more attractive than the one with us.

We may not be able to negotiate collaborations on a timely basis, on acceptable terms, or at all. If we are unable to do so, we may have to curtail the development of the product candidate for which we are seeking to collaborate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization, reduce the scope of any sales or marketing activities or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop product candidates or bring them to market and generate product revenue.

Risks Related to Our Intellectual Property

Our success depends in part on our ability to obtain intellectual property rights for our proprietary technologies and product candidates, as well as our ability to protect our intellectual property. It is difficult and costly to protect our proprietary rights and technology, and we may not be able to ensure their protection.

Our commercial success will depend in large part on obtaining and maintaining patent, trademark and trade secret protection of our proprietary technologies and our product candidates, their respective components, formulations, combination therapies, methods used to manufacture them and methods of treatment, as well as successfully defending these patents against third-party challenges. Our ability to stop unauthorized third parties from making, using, selling, offering to sell or importing our product candidates is dependent upon the extent to which we have rights under valid and enforceable patents that cover these activities. If we are unable to secure and maintain patent protection for any product or technology we develop, or if the scope of the patent protection secured is not sufficiently broad, our competitors could develop and commercialize products and technology

[Table of Contents](#)

similar or identical to ours, and our ability to commercialize any product candidates we may develop may be adversely affected. Moreover, we may not be able to obtain intellectual property protection with respect to the SL pairs that we identify which are the targets of our current and future product candidates. Although we expect that the compounds underlying our product candidates will be protectable through intellectual property rights, our competitors could develop their own inhibitors based on the SL pairs we identify that might not be protected by our intellectual property rights.

The patenting 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. In addition, we may not pursue or obtain patent protection in all relevant markets. 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 license from or license to third parties and are reliant on our licensors or licensees.

The strength of patents in the biotechnology and pharmaceutical field involves complex legal and scientific questions and can be uncertain. The patent applications that we own or in-license may fail to result in issued patents with claims that cover our product candidates or uses thereof in the United States or in other foreign countries. Even if the patents do successfully issue, third parties may challenge the validity, enforceability or scope thereof, which may result in such patents being narrowed, invalidated or held unenforceable. Furthermore, even if they are unchallenged, our patents and patent applications may not adequately protect our intellectual property or prevent others from designing around our claims. If the breadth or strength of protection provided by the patent applications we hold with respect to our product candidates is threatened, it could dissuade companies from collaborating with us to develop, and threaten our ability to commercialize, our product candidates. Further, if we encounter delays in our clinical trials, the period of time during which we could market our product candidates under patent protection would be reduced.

Since patent applications in the United States and most other countries are confidential for a period of time after filing, we cannot be certain that we were the first to file any patent application related to our product candidates. Furthermore, for United States applications in which all claims are entitled to a priority date before March 16, 2013, an interference proceeding can be provoked by a third-party or instituted by the United States patent office, or USPTO, to determine who was the first to invent any of the subject matter covered by the patent claims of our applications.

We cannot be certain that we are the first to invent the inventions covered by pending patent applications and, if we are not, we may be subject to priority disputes. We may be required to disclaim part or all of the term of certain patents or all of the term of certain patent applications. There may be prior art of which we are not aware that may affect the validity or enforceability of a patent claim. There also may be prior art of which we are aware, but which we do not believe affects the validity or enforceability of a claim, which may, nonetheless, ultimately be found to affect the validity or enforceability of a claim. No assurance can be given that if challenged, our patents would be declared by a court to be valid or enforceable or that even if found valid and enforceable, a competitor's technology or product would be found by a court to infringe our patents. We may analyze patents or patent applications of our competitors that we believe are relevant to our activities, and consider that we are free to operate in relation to our product candidates, but our competitors may achieve issued claims, including in patents we consider to be unrelated, which block our efforts or may potentially result in our product candidates or our activities infringing such claims. The possibility exists that others will develop products which have the same effect as our products on an independent basis which do not infringe our patents or other intellectual property rights, or will design around the claims of patents that we have had issued that cover our products.

Recent or future patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents. Under the enacted Leahy-Smith America Invents Act, or America Invents Act, enacted in 2013, the United States moved from a "first to invent" to a "first-to-file" system. Under a "first-to-file" system, assuming the other requirements for

[Table of Contents](#)

patentability are met, the first inventor to file a patent application generally will be entitled to a patent on the invention regardless of whether another inventor had made the invention earlier. The America Invents Act includes a number of other significant changes to U.S. patent law, including provisions that affect the way patent applications are prosecuted, redefine prior art and establish a new post-grant review system. The effects of these changes are currently unclear as the USPTO only recently developed new regulations and procedures in connection with the America Invents Act and many of the substantive changes to patent law, including the “first-to-file” provisions, only became effective in March 2013. In addition, the courts have yet to address many of these provisions and the applicability of the act and new regulations on specific patents discussed herein have not been determined and would need to be reviewed. However, the America Invents Act 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 a material adverse effect on our business and financial condition.

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 make or use compounds or cells that are similar to the biological compositions of our product candidates but that are not covered by the claims of our patents;
- the active biological ingredients in our current product candidates will eventually become commercially available in biosimilar drug products, and no patent protection may be available with regard to formulation or method of use;
- we or our licensors, as the case may be, may fail to meet our obligations to the U.S. government in regards to any in-licensed patents and patent applications funded by U.S. government grants, leading to the loss of patent rights;
- we or our licensors, as the case may be, might not have been the first to file patent applications for these inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies;
- it is possible that our pending patent applications will not result in issued patents;
- it is possible that there are prior public disclosures that could invalidate our or our licensors’ patents, as the case may be, or parts of our or their patents;
- it is possible that others may circumvent our owned or in-licensed patents;
- it is possible that there are unpublished applications or patent applications maintained in secrecy that may later issue with claims covering our products or technology similar to ours;
- the laws of foreign countries may not protect our or our licensors’, as the case may be, proprietary rights to the same extent as the laws of the United States;
- the claims of our owned or in-licensed issued patents or patent applications, if and when issued, may not cover our product candidates;
- our owned or in-licensed issued patents may not provide us with any competitive advantages, may be narrowed in scope, or be held invalid or unenforceable as a result of legal challenges by third parties;
- the inventors of our owned or in-licensed patents or patent applications may become involved with competitors, develop products or processes which design around our patents, or become hostile to us or the patents or patent applications on which they are named as inventors;
- it is possible that our owned or in-licensed patents or patent applications omit individual(s) that should be listed as inventor(s) or include individual(s) that should not be listed as inventor(s), which may cause these patents or patents issuing from these patent applications to be held invalid or unenforceable;

[Table of Contents](#)

- we have engaged in scientific collaborations in the past, and will continue to do so in the future. Such collaborators may develop adjacent or competing products to ours that are outside the scope of our patents;
- we may not develop additional proprietary technologies for which we can obtain patent protection;
- it is possible that product candidates or diagnostic tests we develop may be covered by third parties' patents or other exclusive rights; or
- the patents of others may have an adverse effect on our business.

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

The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. In addition, periodic maintenance fees, renewal fees, annuity fees and various other government fees on patents and/or applications will have to be paid to the USPTO and various government patent agencies outside of the United States over the lifetime of our owned patents and/or applications and any patent rights we may own or license in the future. We rely on our outside counsel to pay these fees due to non-U.S. patent agencies. The USPTO and various non-U.S. government patent agencies require compliance with several 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. Non-compliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. If we fail to maintain the patents and patent applications covering our products or technologies, we may not be able to stop a competitor from marketing products that are the same as or similar to our product candidates, which would have a material adverse effect on our business. In many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. There are situations, however, in which non-compliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, potential competitors might be able to enter the market and this circumstance could harm our business.

We rely in part on trade secrets to protect our technology, and our failure to obtain or maintain trade secret protection could harm our business.

We rely on trade secrets to protect some of our technology and proprietary information, especially where we believe patent protection is not appropriate or obtainable as is the case for our SNIPRx platform. However, trade secrets are difficult to protect. Litigating a claim that a third party had illegally obtained and was using our trade secrets would be expensive and time consuming, and the outcome would be unpredictable. Moreover, if our competitors independently develop similar knowledge, methods and know-how, it will be difficult for us to enforce our rights and our business could be harmed.

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

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. We expect to seek extensions of patent terms in the United States and, if available, in other countries where we are prosecuting patents. In the United States, the Drug Price Competition and Patent Term Restoration Act of 1984 permits a patent term extension of up to five years beyond the normal expiration of the patent, which is limited to the approved indication (or any additional indications approved during the period of extension). However, the applicable authorities, including the FDA and the USPTO in the United States, and any equivalent regulatory authority in other countries, may not agree with our assessment of whether such extensions

[Table of Contents](#)

are available, and may refuse to grant extensions to our patents, or may grant more limited extensions than we request. If this occurs, our competitors may be able to take advantage of our investment in development and clinical trials by referencing our clinical and preclinical data and launch their drug earlier than might otherwise be the case.

Patent term extensions in other countries may also be subject to certain procedural or administrative requirements including adherence to certain strict timelines. A failure to meet such requirements may result in a loss of the extension in those countries.

Intellectual property rights do not necessarily address all potential threats to our business.

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. The following examples are illustrative:

- others may be able to make compounds or formulations that are similar to our product candidates but that are not covered by the claims of any patents, should they issue, that we own or control;
- we or any strategic partners might not have been the first to make the inventions covered by the issued patents or pending patent applications that we own or control;
- we might not have been the first to file patent applications covering certain of our inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights;
- it is possible that our pending patent applications will not lead to issued patents;
- issued patents that we own or control may not provide us with any competitive advantages, or may be held invalid or unenforceable as a result of legal challenges;
- our competitors might conduct research and development activities in the United States and other countries that provide a safe harbor from patent infringement claims for certain research and development activities, as well as in countries where we do not have patent rights and then use the information learned from such activities to develop competitive drugs for sale in our major commercial markets;
- we may not develop 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 have a material adverse effect on our business, financial condition, results of operations and prospects.

We may become involved in lawsuits to protect or enforce our patents or other intellectual property rights, which could be expensive, time consuming and unsuccessful.

Competitors may infringe our issued patents, future trademarks, copyrights or other intellectual property. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming and divert the time and attention of our management and scientific personnel. Any claims we assert against perceived infringers could provoke these parties to assert counterclaims against us alleging that we infringe their patents, trademarks, copyrights or other intellectual property. In addition, in a patent infringement proceeding, there is a risk that a court will decide that a patent of ours is invalid or unenforceable, in whole or in part, and that we do not have the right to stop the other party from using the invention at issue. There is also a risk that, even if the validity of such patents is upheld, the court will construe the patent's claims narrowly or decide that we do not have the right to stop the other party from using the invention at issue on the grounds that our patents do not cover the invention. An adverse outcome in a litigation or proceeding involving our patents could limit our ability to assert our patents against those parties or other competitors, and may curtail or preclude our ability to exclude third parties from making and selling similar or competitive products. Similarly, if we assert trademark infringement claims, a court may determine that the marks we have asserted are invalid or unenforceable, or that the

party against whom we have asserted trademark infringement has superior rights to the marks in question. In this case, we could ultimately be forced to cease use of such trademarks.

In any infringement litigation, any award of monetary damages we receive may not be commercially valuable. 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 litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common shares. Moreover, there can be no assurance that we will have sufficient financial or other resources to file and pursue such infringement claims, which typically last for years before they are concluded. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. Even if we ultimately prevail in such claims, the monetary cost of such litigation and the diversion of the attention of our management and scientific personnel could outweigh any benefit we receive as a result of the proceedings. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing, misappropriating or successfully challenging our intellectual property rights. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a negative impact on our ability to compete in the marketplace.

Third parties may initiate legal proceedings alleging that we are infringing their intellectual property rights, the outcome of which would be uncertain and could have a negative impact on the success of our business.

Our commercial success depends, in part, upon our ability and the ability of future collaborators, if any, to develop, manufacture, market and sell our product candidates and use our proprietary technologies without infringing the proprietary rights and intellectual property of third parties. The biotechnology and pharmaceutical industries are characterized by extensive and complex litigation regarding patents and other intellectual property rights. We may in the future become party to, or be threatened with, adversarial proceedings or litigation regarding intellectual property rights with respect to our product candidates and technology, including interference proceedings, post grant review and inter partes review before the USPTO or equivalent foreign regulatory authority. Third parties may assert infringement claims against us based on existing patents or patents that may be granted in the future, regardless of their merit. There is a risk that third parties may choose to engage in litigation with us to enforce or to otherwise assert their patent rights against us. Even if we believe such claims are without merit, a court of competent jurisdiction could hold that these third-party patents are valid, enforceable and infringed, which could have a negative impact on our ability to commercialize our current and any future product candidates. In order to successfully challenge the validity of any such U.S. patent in federal court, we would need to overcome a presumption of validity. As this burden is a high one requiring us to present clear and convincing evidence as to the invalidity of any such U.S. patent claim, there is no assurance that a court of competent jurisdiction would invalidate the claims of any such U.S. patent. Foreign courts will have similar burdens to overcome in order to successfully challenge a third party claim of patent infringement. If we are found to infringe a third party's valid and enforceable intellectual property rights, we could be required to obtain a license from such third party to continue developing, manufacturing and marketing our product candidate(s) and technology. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors and other third parties access to the same technologies licensed to us, and it could require us to make substantial licensing and royalty payments. We could be forced, including by court order, to cease developing, manufacturing and commercializing the infringing technology or product candidate. In addition, we could be found liable for monetary damages, including treble damages and attorneys' fees, if we are found to have willfully infringed a patent or other intellectual property right. A finding of infringement could prevent us from manufacturing and commercializing our product candidates or force us to cease some or all of our business operations, which could materially harm our business. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business, financial condition, results of operations and prospects.

We may need to license intellectual property from third parties, and such licenses may not be available or may not be available on commercially reasonable terms.

A third party may hold intellectual property rights, including patent rights, that are important or necessary to the development of our product candidates. It may be necessary for us to use the patented or proprietary technology of third parties to commercialize our product candidates, in which case we would be required to obtain a license from these third parties. Such a license may not be available on commercially reasonable terms, or at all, and we could be forced to accept unfavorable contractual terms. If we are unable to obtain such licenses on commercially reasonable terms, our business could be harmed.

We depend on intellectual property licensed from a third party and termination of this license 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. In particular, we are dependent on our license agreement with New York University. Any termination of this license could result in the loss of significant rights and could harm our ability to commercialize our product candidates. See “Business—License and Collaboration Agreements” for additional information.

Disputes may also arise between us and our current licensor or future licensors regarding intellectual property subject to a license agreement, including:

- 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 or future 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, New York University or any future licensors fail to adequately protect any licensed intellectual property, our ability to commercialize products could suffer.

We may be subject to claims asserting that our employees, consultants or advisors have wrongfully used or disclosed alleged trade secrets of their current or former employers or claims asserting ownership of what we regard as our own intellectual property.

Many of our employees, consultants or advisors are currently, or were previously, employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees, consultants and advisors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that these individuals or we have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such individual’s current or former employer. Litigation may be necessary to defend against these claims. If we fail in defending

[Table of Contents](#)

any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management.

In addition, we may in the future be subject to claims by our former employees or consultants asserting an ownership right in our patents or patent applications, as a result of the work they performed on our behalf. Although it is our policy to require our employees and contractors who may be involved in the 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, and we cannot be certain that our agreements with such parties will be upheld in the face of a potential challenge or that they will not be breached, for which we may not have an adequate remedy. The assignment of intellectual property rights may not be self-executing or the assignment agreements may be breached, and we may be forced to bring claims against third parties, or defend claims that they may bring against us, to determine the ownership of what we regard as our intellectual property.

Changes in U.S. patent law or the patent law of other countries or jurisdictions could diminish the value of patents in general, thereby impairing our ability to protect our future product candidates.

The United States has recently enacted and implemented wide ranging patent reform legislation. The U.S. Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening 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 value of patents, once obtained. Depending on actions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that could weaken our ability to obtain new patents or to enforce patents that we have licensed or that we might obtain in the future. Similarly, changes in patent law and regulations in other countries or jurisdictions, changes in the governmental bodies that enforce them or changes in how the relevant governmental authority enforces patent laws or regulations may weaken our ability to obtain new patents or to enforce patents that we have licensed or that we may obtain in the future.

We may not be able to protect our intellectual property rights throughout the world, which could negatively impact our business.

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 could be less extensive than those in the United States. In some cases, we may not be able to obtain patent protection for certain technology outside 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, even in jurisdictions where we do pursue patent protection. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, even in jurisdictions where we do pursue patent protection or from selling or importing products made using our inventions in and into the United States or other jurisdictions.

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 and other intellectual property protection, which could make it difficult for us to stop the infringement of our patents, if pursued and obtained, 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.

Reliance on third parties requires us to share our proprietary information, which increases the possibility that such information will be misappropriated or disclosed.

Because we rely on third parties to develop and manufacture our product candidates, or if we collaborate with third parties for the development or commercialization of our future product candidates, we must, at times, share proprietary information with them. We seek to protect our proprietary technology in part by entering into confidentiality agreements and, if applicable, material transfer agreements, consulting agreements or other similar agreements with our advisors, employees, third-party contractors and consultants prior to beginning research or disclosing proprietary information. These agreements typically limit the rights of the third parties to use or disclose our confidential information. Despite the contractual provisions employed when working with third parties, the need to share confidential information increases the risk that such information become known by our competitors, is inadvertently incorporated into the technology of others, or is disclosed or used in violation of these agreements. Given that our proprietary position is based, in part, on our know-how, a competitor's discovery of our know-how or other unauthorized use or disclosure could have an adverse effect on our business and results of operations.

In addition, these agreements typically restrict the ability of our advisors, employees, third-party contractors and consultants to publish data potentially relating to our know-how. Despite our efforts to protect our know-how, we may not be able to prevent the unauthorized disclosure or use of our technical know-how by the parties to these agreements. Moreover, we cannot guarantee that we have entered into such agreements with each party that may have or have had access to our confidential information or proprietary technology and processes. Monitoring unauthorized uses and disclosures is difficult, and we do not know whether the steps we have taken to protect our proprietary technologies will be effective. If any of the collaborators, scientific advisors, employees, contractors and consultants who are parties to these agreements breaches or violates the terms of any of these agreements, we may not have adequate remedies for any such breach or violation. Moreover, if confidential information that is licensed or disclosed to us by our partners, collaborators, or others is inadvertently disclosed or subject to a breach or violation, we may be exposed to liability to the owner of that confidential information. Enforcing a claim that a third-party illegally obtained and is using our proprietary information, like patent litigation, is expensive and time consuming, and the outcome is unpredictable. In addition, courts outside the United States are sometimes less willing to protect proprietary information.

Any trademarks we may obtain may be infringed or successfully challenged, resulting in harm to our business.

We expect to rely on trademarks as one means to distinguish any of our product candidates that are approved for marketing from the products of our competitors. While we have registered a trademark for our SNIPRx platform, we have not yet selected trademarks for RP-3500 and have not yet begun the process of applying to register trademarks for RP-3500 or any other product candidate. Once we select trademarks and apply to register them, our trademark applications may not be approved. Third parties may oppose our trademark applications or otherwise challenge our use of the trademarks. In the event that our trademarks are successfully challenged, we could be forced to rebrand our products, which could result in loss of brand recognition and could require us to devote resources to advertising and marketing new brands. Our competitors may infringe our trademarks, and we may not have adequate resources to enforce our trademarks.

In addition, any proprietary name we propose to use with RP-3500 or any future product candidate in the United States must be approved by the FDA, regardless of whether we have registered it, or applied to register it, as a trademark. The FDA typically conducts a review of proposed product names, including an evaluation of the potential for confusion with other product names. If the FDA objects to any of our proposed proprietary product names, we may be required to expend significant additional resources in an effort to identify a suitable

[Table of Contents](#)

proprietary product name that would qualify under applicable trademark laws, not infringe the existing rights of third parties and be acceptable to the FDA. Comparable foreign regulators may have similar requirements, and it is possible that different proprietary or non-proprietary names may be required in different jurisdictions.

If we are unable to protect the confidentiality of our proprietary information, our business and competitive position would be harmed.

In addition to seeking patent and trademark protection for our product candidate, we also rely on unpatented know-how, technology and other proprietary information, to maintain our competitive position. We seek to protect our proprietary information, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to them, such as our employees, corporate collaborators, outside scientific collaborators, contract manufacturers, consultants, advisors and other third parties. We also enter into confidentiality and invention or patent assignment agreements with our employees and consultants. Despite these efforts, any of these parties may breach the agreements and disclose our proprietary information. Monitoring unauthorized uses and disclosures of our intellectual property is difficult, and we do not know whether the steps we have taken to protect our intellectual property will be effective. In addition, we may not be able to obtain adequate remedies for any such breaches. Enforcing a claim that a party illegally disclosed or misappropriated proprietary information is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets.

Moreover, our competitors may independently develop knowledge, methods and know-how equivalent to our proprietary information. Competitors could purchase our products and replicate some or all of the competitive advantages we derive from our development efforts for technologies on which we do not have patent protection. If any of our proprietary information were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent them, or those to whom they communicate it, from using that technology or information to compete with us. If any of our proprietary information were to be disclosed to or independently developed by a competitor, our competitive position would be harmed.

We also seek to preserve the integrity and confidentiality of our data and other confidential information by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in these individuals, organizations and systems, agreements or security measures may be breached and detecting the disclosure or misappropriation of confidential information and enforcing a claim that a party illegally disclosed or misappropriated confidential information is difficult, expensive and time-consuming, and the outcome is unpredictable. Further, we may not be able to obtain adequate remedies for any breach. In addition, our confidential information may otherwise become known or be independently discovered by competitors, in which case we would have no right to prevent them, or those to whom they communicate it, from using that technology or information to compete with us.

If we do not obtain patent term extension for patents covering our product candidates, our business may be materially harmed, and in any case, the terms of our patents may not be sufficient to effectively protect our product candidates and business.

Patents have a limited term. In most countries, including the United States, the expiration of a patent is generally 20 years after its first effective non-provisional filing date. However, depending upon the timing, duration and specifics of FDA marketing approval of RP-3500, our other product candidates or any future product candidates, one or more of any U.S. patents we may be issued or have licensed may be eligible for limited patent term restoration under the Drug Price Competition and Patent Term Restoration Act of 1984, also known as the Hatch-Waxman Amendments.

The Hatch-Waxman Amendments permit a patent restoration term of up to five years as compensation for patent term lost during product development and the FDA regulatory review process. The Hatch-Waxman Act allows a maximum of one patent to be extended per FDA-approved product as compensation for the patent term

lost during the FDA regulatory review process. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval and only those claims covering such approved drug product, a method for using it or a method for manufacturing it may be extended. Patent term extension may also be available in certain foreign countries upon regulatory approval of our product candidates. However, we may not be granted an extension because of, for example, failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents or otherwise failing to satisfy applicable requirements. Moreover, the applicable time period or the scope of patent protection afforded could be less than we request. If we are unable to obtain patent term extension or restoration or the term of any such extension is less than we request, our competitors may obtain approval of competing products following our patent expiration, and our competitive position, business, financial condition, results of operations, and prospects could be harmed, possibly materially.

If there are delays in obtaining regulatory approvals or other additional delays, the period of time during which we can market our product candidates under patent protection could be further reduced. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such product candidates might expire before or shortly after such product candidates are commercialized. Once the patent term has expired, we may be open to competition from similar or generic products. The launch of a generic version of one of our products in particular would be likely to result in an immediate and substantial reduction in the demand for that product, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Risks Related to Our Business Operations, 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 our management team, including Lloyd Segal, our President and Chief Executive Officer, Michael Zinda, Ph.D., our Chief Scientific Officer, and Maria Koehler, M.D., Ph.D., our Chief Medical Officer. Each of them may currently terminate their employment with us at any time and will continue to be able to do so after the closing of this offering. The loss of the services of any of these persons could impede the achievement of our research, development and commercialization objectives. We do not currently maintain “key person” life insurance on the lives of our executives or any of our employees.

Recruiting and retaining qualified scientific and clinical personnel and, if we progress the development of any of our product candidates, commercialization, manufacturing and sales and marketing personnel, will be critical to our success. 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. Furthermore, replacing executive officers and key employees may be difficult and may take an extended period of time because of the limited number of individuals in our industry with the breadth of skills and experience required to successfully develop, gain regulatory approval of and commercialize our product candidates. Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or motivate these key personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific 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 have commitments under consulting or advisory contracts with other entities that may limit their availability to us. If we are unable to continue to attract and retain high-quality personnel, our ability to pursue our growth strategy will be limited.

We expect to expand our organization, and we may experience difficulties in managing this growth, which could disrupt our operations.

As of March 31, 2020, we had 64 full-time employees, including 53 employees engaged in research and development. As our clinical development and commercialization plans and strategies develop, and as we

[Table of Contents](#)

transition into operating as a public company, we expect we will need additional managerial, operational, sales, marketing, financial, legal and other personnel. Future growth would impose significant added responsibilities on members of management, including:

- identifying, recruiting, integrating, maintaining and motivating additional employees;
- managing our development efforts effectively, including the planned Phase 1 clinical trial of RP-3500, while complying with our contractual obligations to contractors and other third parties; and
- improving our operational, financial and management controls, reporting systems and procedures.

Our future financial performance and our ability to commercialize our product candidates will depend, in part, on our ability to effectively manage any future growth, and our management may also have to divert a disproportionate amount of its attention away from day-to-day activities in order to devote a substantial amount of time to managing these growth activities.

We currently rely, and for the foreseeable future will continue to rely, in substantial part on certain independent organizations, advisors and consultants to provide certain services. The services include substantially all aspects of clinical trial management and manufacturing. We cannot assure you that the services of independent organizations, advisors and consultants will continue to be available to us on a timely basis when needed, or that we can find qualified replacements. In addition, if we are unable to effectively manage our outsourced activities or if the quality or accuracy of the services provided by consultants is compromised for any reason, our preclinical studies or clinical trials may be extended, delayed or terminated, and we may not be able to obtain marketing approval of our product candidates or otherwise advance our business. We cannot assure you that we will be able to manage our existing consultants or find other competent outside contractors and consultants on economically reasonable terms, or at all.

If we are not able to effectively expand our organization by hiring qualified new employees and expanding our groups of consultants and contractors, we may not be able to successfully implement the tasks necessary to further develop and commercialize our product candidates and, accordingly, may not achieve our research, development and commercialization goals.

Our internal computer systems, or those of our collaborators or other contractors or consultants, may fail or suffer security breaches, which could result in a significant disruption of our product development programs and our ability to operate our business effectively.

Our internal computer systems and those of our current and any future collaborators and other contractors or consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. Cyber-attacks are increasing in their frequency, sophistication and intensity, and have become increasingly difficult to detect. Cyber-attacks could include the deployment of harmful malware, ransomware, denial-of-service attacks, social engineering and other means to affect service reliability and threaten the confidentiality, integrity and availability of information. Cyber-attacks also could include phishing attempts or e-mail fraud to cause payments or information to be transmitted to an unintended recipient.

While we have not experienced any significant system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a disruption of our development programs and our business operations, whether due to a loss of our trade secrets or other proprietary information or other similar disruptions. For example, the loss of clinical trial data from completed or future clinical trials by us or our CROs could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. Additionally, any such event that leads to unauthorized access, use or disclosure of personal information, including personal information regarding our patients or employees, could harm our reputation, cause us not to comply with federal and/or state breach notification laws and foreign law equivalents

[Table of Contents](#)

and otherwise subject us to liability under laws and regulations that protect the privacy and security of personal information. Security breaches and other inappropriate access can be difficult to detect, and any delay in identifying them may lead to increased harm of the type described above. While we have implemented security measures to protect our information technology systems and infrastructure, such measures may not prevent service interruptions or security breaches that could adversely affect our business and to the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability, our competitive position could be harmed and the further development and commercialization of our product candidates could be delayed.

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 our product candidates. 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.

Our international operations pose currency risks, which may adversely affect our operating results.

Our reporting and functional currency is the U.S. dollar. Assets and liabilities denominated in currencies other than the U.S. dollar are translated into U.S. dollars at exchange rates in effect at each balance sheet date. Income items and expenses are translated using the average exchange rate in effect for the relevant period.

Our operating results may be affected by volatility in currency exchange rates and our ability to manage effectively our currency transaction risks. Although we report, and will continue to report, our results in U.S. dollars, a portion our expenses are incurred in Canadian dollars as a result of our operations in Canada, as well as other currencies to a lesser extent. For example, we are also exposed to currency risk through our collaboration agreement with Ono as future payments receivable under our collaboration agreement, if any, are denominated in Japanese Yen.

In addition, we maintain a significant portion of our cash in Canadian dollar-denominated reserves. We do not currently manage our foreign currency exposure in a manner that would eliminate the effects of changes in foreign exchange rates. For example, we have not engaged in any active hedging techniques, and we have not employed any derivative instruments to date. Therefore, unfavorable fluctuations in the exchange rate between the Canadian dollar and U.S. dollar could have a negative impact on our business and financial results. We do, however, keep expected Canadian dollar cash requirements in Canadian dollars to form a natural hedge.

Failure to comply with health and data protection laws and regulations could lead to government enforcement actions, including civil or criminal penalties, private litigation, and adverse publicity and could negatively affect our operating results and business.

We and any current and future collaborators may be subject to federal, state/provincial, municipal and foreign data protection laws and regulations, such as laws and regulations that address privacy and data security. In the United States, numerous federal and state laws and regulations, including federal health information privacy laws, state data breach notification laws, state health information privacy laws, and federal and state consumer protection laws, including Section 5 of the Federal Trade Commission Act, that govern the collection, use, disclosure and protection of health-related and other personal information could apply to our operations or the operations of our collaborators. In addition, we may obtain health information from third parties, including

research institutions from which we obtain clinical trial data, that are subject to privacy and security requirements under HIPAA, as amended by HITECH. Depending on the facts and circumstances, we could be subject to civil, criminal, and administrative penalties if we knowingly obtain, use, or disclose individually identifiable health information maintained by a HIPAA-covered entity in a manner that is not authorized or permitted by HIPAA.

Compliance with U.S. and international data protection laws and regulations could require us to take on more onerous obligations in our contracts, restrict our ability to collect, use and disclose data, or in some cases, impact our ability to operate in certain jurisdictions. Failure to comply with these laws and regulations could result in government enforcement actions (which could include civil, criminal and administrative penalties), private litigation, and/or adverse publicity and could negatively affect our operating results and business. Moreover, clinical trial subjects, employees and other individuals about whom we or our current or future collaborators obtain personal information, as well as the providers who share this information with us, may limit our ability to collect, use and disclose the information. Claims that we have violated individuals' privacy rights, failed to comply with data protection laws, or breached our contractual obligations, even if we are not found liable, could be expensive and time-consuming to defend and could result in adverse publicity that could harm our business.

Data collection is governed by restrictive regulations governing the use, processing and cross-border transfer of personal information.

In the event we decide to conduct clinical trials or continue to enroll subjects in our ongoing or future clinical trials, we may be subject to additional privacy restrictions. The collection, use, storage, disclosure, transfer, or other processing of personal data regarding individuals in the European Union, including personal health data, is subject to the GDPR, which became effective on May 25, 2018. The GDPR is wide-ranging in scope and imposes numerous requirements on companies that process personal data, including requirements relating to processing health and other sensitive data, obtaining consent of the individuals to whom the personal data relates, providing information to individuals regarding data processing activities, implementing safeguards to protect the security and confidentiality of personal data, providing notification of data breaches, and taking certain measures when engaging third-party processors. The GDPR also imposes strict rules on the transfer of personal data to countries outside the European Union, including the United States, and permits data protection authorities to impose large penalties for violations of the GDPR, including potential fines of up to €20 million or 4% of annual global revenues, whichever is greater. The GDPR also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies, and obtain compensation for damages resulting from violations of the GDPR. In addition, the GDPR includes restrictions on cross-border data transfers. The GDPR increased our responsibility and liability in relation to personal data that we process where such processing is subject to the GDPR, and we may be required to put in place additional mechanisms to ensure compliance with the GDPR, including as implemented by individual countries. Compliance with the GDPR will be a rigorous and time-intensive process that may increase our cost of doing business or require us to change our business practices, and despite those efforts, there is a risk that we may be subject to fines and penalties, litigation, and reputational harm in connection with our European activities. Further, the United Kingdom's vote in favor of exiting the European Union, often referred to as Brexit, has created uncertainty with regard to data protection regulation in the United Kingdom. In particular, it is unclear how data transfers to and from the United Kingdom will be regulated.

In addition, California recently enacted the California Consumer Privacy Act, or CCPA, which creates new individual privacy rights for California consumers (as defined in the law) and places increased privacy and security obligations on entities handling personal data of consumers or households. The CCPA requires covered companies to provide new disclosure to consumers about such companies' data collection, use and sharing practices, provide such consumers new ways to opt-out of certain sales or transfers of personal information, and provide consumers with additional causes of action. The CCPA went into effect on January 1, 2020, and the California Attorney General may bring enforcement actions for violations beginning July 1, 2020. The CCPA was amended on September 23, 2018, and it remains unclear what, if any, further modifications will be made to

[Table of Contents](#)

this legislation or how it will be interpreted. As currently written, the CCPA may impact our business activities and exemplifies the vulnerability of our business to the evolving regulatory environment related to personal data and protected health information.

Compliance with U.S. and international data protection laws and regulations could require us to take on more onerous obligations in our contracts, restrict our ability to collect, use and disclose data, or in some cases, impact our ability to operate in certain jurisdictions. Failure to comply with U.S. and international data protection laws and regulations could result in government enforcement actions (which could include civil or criminal penalties), private litigation or adverse publicity and could negatively affect our operating results and business. Moreover, clinical trial subjects about whom we or our current or future collaborators obtain information, as well as the providers who share this information with us, may contractually limit our ability to use and disclose the information. Claims that we have violated individuals' privacy rights, failed to comply with data protection laws, or breached our contractual obligations, even if we are not found liable, could be expensive and time consuming to defend and could result in adverse publicity that could harm our business.

Our employees, principal investigators, consultants and commercial partners may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading.

We are exposed to the risk of fraud or other misconduct by our employees, principal investigators, consultants and commercial partners. Misconduct by these parties could include intentional failures to comply with FDA regulations or the regulations applicable in other jurisdictions, provide accurate information to the FDA and other regulatory authorities, comply with healthcare fraud and abuse laws and regulations in the United States and abroad, report financial information or data accurately or disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Such misconduct also could involve the improper use of information obtained in the course of clinical trials or interactions with the FDA or other regulatory authorities, which could result in regulatory sanctions and cause serious harm to our reputation. It is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from government investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us and we are not successful in defending ourselves or asserting our rights, those actions could result in significant civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, exclusion from participating in government funded healthcare programs, such as Medicare and Medicaid, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, contractual damages, reputational harm and the curtailment or restructuring of our operations, any of which could have a negative impact on our business, financial condition, results of operations and prospects.

Risks Related to This Offering and Ownership of Our Common Shares

No public market for our common shares currently exists, and a public market may not develop or be liquid enough for you to sell your shares quickly or at or above the offering price, if at all.

This offering constitutes our initial public offering, and no public market for our common shares currently exists. Any delay in the commencement of trading of our common shares on The Nasdaq Global Select Market would impair the liquidity of the market for our common shares and make it more difficult for holders to sell their shares. If an active trading market for our common shares does not develop following this offering, you may not be able to sell your shares quickly or at the market price. An inactive market may also impair our ability to raise capital to continue to fund operations by selling our common shares and may impair our ability to acquire

[Table of Contents](#)

other companies or technologies by using our common shares as consideration. The initial public offering price of our common shares will be determined by negotiations between us and representatives of the underwriters and may not be indicative of the market prices of our common shares that will prevail in the trading market.

The trading price of our common shares may be volatile and fluctuate substantially, which could result in substantial losses for purchasers of our common shares in this offering.

The trading price of our common shares following this offering is likely to be highly volatile. The stock market in general and the market for biopharmaceutical and pharmaceutical companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, you may not be able to sell your common shares at or above the initial public offering price. In addition to the factors discussed in this “Risk Factors” section and elsewhere in this prospectus, the trading price for our common shares may be influenced by the following factors:

- the commencement, enrollment, timing and results of our planned or future clinical trials of RP-3500 and any future product candidates or those of our competitors;
- our success or failure in identifying new drug candidates to pursue in clinical development;
- the success or failure of our SNIPRx platform in identification of new druggable SL targets;
- the success of competitive drugs, therapies or technologies;
- development of new product candidates that may address our markets and make our product candidates less attractive;
- failure or discontinuation of any of our research or development programs;
- developments related to any existing or future collaborations;
- regulatory or legal developments in the United States and other countries;
- the success of competitive products or technologies;
- developments or disputes concerning patent applications, issued patents or other proprietary rights;
- the recruitment or departure of key personnel;
- the level of expenses related to RP-3500 and any future product candidates or clinical development programs;
- the results of our efforts to discover, develop, acquire or in-license additional product candidates;
- actual or anticipated changes in estimates as to financial results, development timelines or recommendations by securities analysts;
- our inability to obtain or delays in obtaining adequate drug supply for any approved drug or inability to do so at acceptable prices;
- disputes or other developments relating to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- significant lawsuits, including patent or shareholder litigation;
- variations in our financial results or those of companies that are perceived to be similar to us;
- changes in the structure of healthcare payment systems, including coverage and adequate reimbursement for any approved drug;
- sales of common shares by us, our executive officers, directors or principal shareholders, or others;
- market conditions in the pharmaceutical and biotechnology sectors;

[Table of Contents](#)

- general economic, political, and market conditions and overall fluctuations in the financial markets in the United States and abroad;
- investors' general perception of us and our business; and
- the other factors described in this "Risk Factors" section and elsewhere in this prospectus.

These and other market and industry factors may cause the market price and demand for our common shares to fluctuate substantially, regardless of our actual operating performance, which may limit or prevent investors from selling their shares at or above the price paid for the shares and may otherwise negatively affect the liquidity of our common shares. In addition, the stock market in general, and biopharmaceutical companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies.

Some companies that have experienced volatility in the trading price of their shares have been the subject of securities class action litigation. Any lawsuit to which we are a party, with or without merit, may result in an unfavorable judgment. We also may decide to settle lawsuits on unfavorable terms. Any such negative outcome could result in payments of substantial damages or fines, damage to our reputation or adverse changes to our business practices. Defending against litigation is costly and time-consuming, and could divert our management's attention and our resources. Furthermore, during the course of litigation, there could be negative public announcements of the results of hearings, motions or other interim proceedings or developments, which could have a negative effect on the market price of our common shares.

Concentration of ownership of our common shares among our existing executive officers, directors and principal shareholders may prevent new investors from influencing significant corporate decisions.

Based upon our common shares outstanding as of March 31, 2020, upon the completion of this offering, our executive officers, directors and shareholders who owned more than 5% of our outstanding common shares before this offering will, in the aggregate, beneficially own shares representing approximately 59.2% of our outstanding common shares. If our executive officers, directors and shareholders who owned more than 5% of our outstanding common shares acted together, they may be able to significantly influence all matters requiring shareholder approval, including the election and removal of directors and approval of any merger, consolidation or sale of all or substantially all of our assets. The concentration of voting power and transfer restrictions could delay or prevent an acquisition of our company on terms that other shareholders may desire or result in the management of our company in ways with which other shareholders disagree.

If research analysts do not publish research or reports, or publish unfavorable research or reports, about us, our business or our market, our share price and trading volume could decline.

The trading market for our common shares will be influenced by the research and reports that industry or financial analysts publish about us or our business. We do not currently have, and may never obtain, research coverage by industry or financial analysts. Equity research analysts may elect not to provide research coverage of our common shares after the completion of this offering, and such lack of research coverage may adversely affect the market price of our common shares. In the event we do have equity research analyst coverage, we will not have any control over the analysts or the content and opinions included in their reports. The price of our shares could decline if one or more equity research analysts downgrade our shares or issue other unfavorable commentary or research about us. If one or more equity research analysts ceases coverage of us or fails to publish reports on us regularly, demand for our shares could decrease, which in turn could cause the trading price or trading volume of our common shares to decline.

If you purchase our common shares in this offering, you will suffer immediate dilution of your investment.

The initial public offering price of our common shares will be substantially higher than the net tangible book value per common share. Therefore, if you purchase our common shares in this offering, you will pay a

[Table of Contents](#)

price per share that substantially exceeds our net tangible book value per share after this offering. Based on an assumed initial public offering price of \$19.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, you will experience immediate dilution of \$11.20 per share, representing the difference between our pro forma as adjusted net tangible book value per share after this offering and the initial public offering price per share. After this offering, we will also have outstanding options to purchase common shares with exercise prices lower than the initial public offering price. To the extent these outstanding options are exercised, there will be further dilution to investors in this offering. See the section titled “Dilution” for additional information.

A significant portion of our total outstanding shares are restricted from immediate resale, but may be sold into the market in the near future. This could cause the market price of our shares to drop significantly, even if our business is doing well.

Sales of a substantial number of our common shares in the public market could occur at any time. If our shareholders sell, or the market perceives that our shareholders intend to sell, substantial amounts of our common shares in the public market following this offering, the market price of our common shares could decline significantly.

Upon completion of this offering, we will have 34,057,559 common shares outstanding, based on the number of shares outstanding as of March 31, 2020. Of these shares, the 10,000,000 common shares sold in this offering will be freely tradable, and the remaining 24,057,559 common shares will be available for sale in the public market beginning 180 days after the date of this prospectus following the expiration of lock-up agreements entered into by our shareholders in connection with the offering. The representatives of the underwriters may agree to release these shareholders from their lock-up agreements at any time and without notice, which would allow for earlier sales of shares in the public market. Sales of a substantial number of such shares upon expiration of the lock-up agreements, the perception that such sales may occur, or early release of restrictions in the lock-up agreements, could cause the market price of our common shares to fall or make it more difficult for you to sell your shares at a time and price that you deem appropriate.

In addition, promptly following the completion of this offering, we intend to file one or more registration statements on Form S-8 to register our common shares that are issuable pursuant to our equity incentive plans. Shares registered under these registration statements on Form S-8 will be available for sale in the public market subject to vesting arrangements and exercise of options, the lock-up agreements described above and, in the case of our affiliates, the restrictions of Rule 144 under the Securities Act of 1933, as amended.

Additionally, after this offering, the holders of an aggregate of 23,090,197 common shares, which assumes the automatic exercise of the warrant held by an affiliate of Bristol Myers Squibb into an aggregate of 789,474 common shares, based on an assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, or their transferees, will have rights, subject to some conditions, to require us to file one or more registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other shareholders. If we were to register the resale of these shares, they could be freely sold in the public market. If these additional 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.

Because we do not anticipate paying any cash dividends on our share capital in the foreseeable future, capital appreciation, if any, will be your sole source of gain.

You should not rely on an investment in our common shares to provide dividend income. We have never declared or paid cash dividends on our share capital. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. In addition, the terms of any future debt agreements or preferred equity may preclude us from paying dividends. As a result, capital appreciation, if any, of our common shares will be your sole source of gain for the foreseeable future. Investors seeking cash dividends should not purchase our common shares in this offering.

Our articles of continuance to be in effect following completion of this offering will permit us to issue an unlimited number of common shares and preferred shares without additional shareholder approval.

Our articles of continuance to be in effect following completion of this offering will permit us to issue an unlimited number of common shares. We anticipate that we will, from time to time, issue additional common shares in the future. Any further issuances of common shares will result in immediate dilution to existing shareholders and may have an adverse effect on the value of their holdings.

Our articles of continuance to be in effect following completion of this offering will also permit us to issue an unlimited number of preferred shares, issuable in one or more series and, subject to the provisions of the Business Corporations Act (Québec), or QBCA, having such designations, rights, privileges, restrictions and conditions, including dividend and voting rights, as our board of directors may determine and which may be superior to those of the common shares. The issuance of preferred shares, while providing flexibility in connection with possible acquisitions, financings and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in control of Repare and might adversely affect the market price of our common shares and the voting and other rights of the holders of common shares. We have no current or immediate plans to issue any preferred shares following the completion of this offering.

Subject to Nasdaq listing rules, we will not be required to obtain the approval of shareholders for the issuance of additional common shares and preferred shares.

We have broad discretion in the use of our cash, including the net proceeds from this offering, and may use them ineffectively, in ways in which you do not agree or in ways that do not increase the value of your investment.

Our management will have broad discretion in the application of our cash, including the net proceeds from this offering, and could spend the proceeds in ways that do not improve our results of operations or enhance the value of our common shares. The failure by our management to apply these funds effectively could result in financial losses that could have a negative impact on our business, cause the price of our common shares to decline and delay the development of our product candidates. Pending their use, we may invest our cash, including the net proceeds from this offering, in a manner that does not produce income or that loses value. See the section titled “Use of Proceeds” for additional information.

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.

Section 404(a) of the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes-Oxley Act, requires that beginning with our second annual report following our initial public offering, management assess and report annually on the effectiveness of our internal control over financial reporting and identify any material weaknesses in our internal control over financial reporting. Although Section 404(b) of the Sarbanes-Oxley Act requires our independent registered public accounting firm to issue an annual report that addresses the effectiveness of our internal control over financial reporting, we have opted to rely on the exemptions provided in the JOBS Act, and consequently will not be required to comply with SEC rules that implement Section 404(b) until such time as we are no longer an emerging growth company.

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. Inadequate 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.

Our disclosure controls and procedures may not prevent or detect all errors or acts of fraud.

Upon the completion of this offering, we will become subject to the periodic reporting requirements of the Securities Exchange Act of 1934, or the Exchange Act. We designed our disclosure controls and procedures to reasonably assure that information we must disclose in reports we file or submit under the Exchange Act is accumulated and communicated to management, and recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC. We believe that any disclosure controls and procedures or internal controls and procedures, no matter how well-conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met.

These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. For example, our directors or executive officers could inadvertently fail to disclose a new relationship or arrangement causing us to fail to make any related party transaction disclosures. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by an unauthorized override of the controls. Accordingly, because of the inherent limitations in our control system, misstatements due to error or fraud may occur and not be detected.

If we are a passive foreign investment company following this offering, there could be adverse U.S. federal income tax consequences to U.S. Holders.

Under the Internal Revenue Code of 1986, as amended, or the Code, we will be a passive foreign investment company, or PFIC, for any taxable year in which (1) 75% or more of our gross income consists of passive income or (2) 50% or more of the average quarterly value of our assets consists of assets that produce, or are held for the production of, passive income, including cash. For purposes of these tests, passive income includes dividends, interest, gains from the sale or exchange of investment property and certain rents and royalties. In addition, for purposes of the above calculations, a non-U.S. corporation that directly or indirectly owns at least 25% by value of the shares of another corporation is treated as if it held its proportionate share of the assets and received directly its proportionate share of the income of such other corporation.

Based on the composition of our income and assets, we believe we were a PFIC for the taxable year ended December 31, 2019. However, based on our operating history and the projected composition of our income and valuation of our assets, including goodwill, for the taxable year ending December 31, 2020, we do not expect to be classified as a PFIC. However, no assurances regarding our PFIC status can be provided for any past, current or future taxable years. The determination of whether we are a PFIC is a fact-intensive determination made on an annual basis and the applicable law is subject to varying interpretation. In particular, the characterization of our assets as active or passive may depend in part on our current and intended future business plans, which are subject to change. In addition, for our current and future taxable years, the total value of our assets for PFIC testing purposes may be determined in part by reference to the market price of our common shares from time to time, which may fluctuate considerably. Under the income test, our status as a PFIC depends on the composition of our income which will depend on the transactions we enter into in the future and our corporate structure. The composition of our income and assets is also affected by how, and how quickly, we spend the cash we raise in any offering, including this offering. Accordingly, our U.S. counsel expresses no opinion with respect to our PFIC status for our taxable year ended December 31, 2019, and also expresses no opinion with regard to our expectations regarding our PFIC status in the future.

If we are a PFIC, a U.S. Holder (as defined below under “Material Income Tax Considerations—Material U.S. Federal Income Tax Considerations for U.S. Holders”) of our common shares would be subject to adverse

[Table of Contents](#)

U.S. federal income tax consequences, such as ineligibility for any preferential tax rates for individuals 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. For further discussion of the PFIC rules and the adverse U.S. federal income tax consequences in the event we are classified as a PFIC, see the section titled “Material Income Tax Considerations—Material U.S. Federal Income Considerations for U.S. Holders” in this prospectus. Each U.S. Holder should consult its own tax advisors with respect to the potential adverse U.S. tax consequences to it if we are or were to become a PFIC.

If we are a controlled foreign corporation, there could be materially adverse U.S. federal income tax consequences to certain U.S. Holders of our common shares.

Each “Ten Percent Shareholder” (as defined below) in a non-U.S. corporation that is classified as a controlled foreign corporation, or a CFC, for U.S. federal income tax purposes generally is required to include in income for U.S. federal tax purposes such Ten Percent Shareholder’s pro rata share of the CFC’s “Subpart F income,” global intangible low taxed income, and investment of earnings in U.S. property, even if the CFC has made no distributions to its shareholders. Subpart F income generally includes dividends, interest, rents, royalties, gains from the sale of securities and income from certain transactions with related parties. In addition, a Ten Percent Shareholder that realizes gain from the sale or exchange of shares in a CFC may be required to classify a portion of such gain as dividend income rather than capital gain. An individual that is a Ten Percent Shareholder with respect to a CFC generally would not be allowed certain tax deductions or foreign tax credits that would be allowed to a Ten Percent Shareholder that is a U.S. corporation. Failure to comply with these reporting obligations may subject a Ten Percent Shareholder to significant monetary penalties and may prevent the statute of limitations with respect to such Ten Percent Shareholder’s U.S. federal income tax return for the year for which reporting was due from starting.

A non-U.S. corporation generally will be classified as a CFC for U.S. federal income tax purposes if Ten Percent Shareholders own, directly or indirectly, more than 50% of either the total combined voting power of all classes of stock of such corporation entitled to vote or of the total value of the stock of such corporation. A “Ten Percent Shareholder” is a United States person (as defined by the Code) who owns or is considered to own 10% or more of the total combined voting power of all classes of stock entitled to vote or 10% or more of the total value of all classes of stock of such corporation.

We believe that we were a CFC in the 2019 taxable year, and we may continue to be a CFC in the 2020 taxable year or in a subsequent taxable year. The determination of CFC status is complex and includes attribution rules, the application of which is not entirely certain. In addition, recent changes to the attribution rules relating to the determination of CFC status may make it difficult to determine our CFC status for any taxable year. Because our group includes at least one U.S. subsidiary (Repare Therapeutics USA Inc.), if we were to form or acquire any non-U.S. subsidiaries in the future, those changes to the attribution rules may cause such non-U.S. subsidiaries to be treated as controlled foreign corporations. We cannot provide any assurances that we will assist holders of our common shares in determining whether we or any non-U.S. subsidiaries that we may form or acquire are or will be treated as a CFC or whether any holder of the common shares is treated as a Ten Percent Shareholder with respect to any such CFC or furnish to any Ten Percent Shareholders information that may be necessary to comply with the aforementioned reporting and tax paying obligations.

Each U.S. Holder should consult its own tax advisors with respect to the potential adverse U.S. tax consequences of becoming a Ten Percent Shareholder in a CFC. If we are classified as both a CFC and a PFIC (as defined above), we generally will not be treated as a PFIC with respect to those U.S. Holders that meet the definition of a Ten Percent Shareholder during the period in which we are a CFC.

Future changes to tax laws could materially adversely affect our company and reduce net returns to our shareholders.

The tax treatment of the company is subject to changes in tax laws, regulations and treaties, or the interpretation thereof, tax policy initiatives and reforms under consideration and the practices of tax authorities in jurisdictions in which we operate, as well as tax policy initiatives and reforms related to the Organisation for Economic Co-Operation and Development's, or OECD, Base Erosion and Profit Shifting, or BEPS, Project, the European Commission's state aid investigations and other initiatives. Such changes may include (but are not limited to) the taxation of operating income, investment income, dividends received or (in the specific context of withholding tax) dividends paid. We are unable to predict what tax reform may be proposed or enacted in the future or what effect such changes would have on our business, but such changes, to the extent they are brought into tax legislation, regulations, policies or practices, could affect our financial position and overall or effective tax rates in the future in countries where we have operations, reduce post-tax returns to our shareholders, and increase the complexity, burden and cost of tax compliance.

Our ability to use our non-capital loss carryforwards to offset future taxable income may be subject to certain limitations.

In general, where control of a corporation has been acquired by a person or group of persons, subsection 111(5) of the Income Tax Act (Canada), or the Canadian Tax Act, and equivalent provincial income tax legislation restrict the corporation's ability to carry forward non-capital losses from preceding taxation years. We have not performed a detailed analysis to determine whether an acquisition of control for the purposes of subsection 111(5) of the Canadian Tax Act has occurred after each of our previous issuances of common shares or preferred shares. In addition, if we undergo an acquisition of control after this public offering, our ability to utilize non-capital losses could be limited by subsection 111(5) of the Canadian Tax Act. As of December 31, 2019, we had Canadian federal and provincial non-capital loss carry forwards of \$31.5 million, which expire beginning in 2036 through 2039. In addition, we also have scientific research and experimental development expenditures of approximately \$15.8 million for Canadian federal and provincial income tax purposes, which have not been deducted. These expenditures are available to reduce future taxable income and have an unlimited carry-forward period. We also have scientific research and experimental development tax credit carry forwards of approximately \$2.6 million for Canadian federal income tax purposes, which expire beginning in 2036 through 2039. Research and development tax credits and expenditures are subject to verification by the tax authorities, and, accordingly, these amounts may vary. Future changes in our share ownership, some of which are outside of our control, could result in an acquisition of control for the purposes of subsection 111(5) of the Canadian Tax Act. Furthermore, our ability to utilize non-capital losses (or U.S. equivalents) of companies that we may acquire in the future may be subject to limitations. As a result, even if we attain profitability, we may be unable to use a material portion of our non-capital losses and other tax attributes, which could negatively impact our future cash flows.

Tax authorities may disagree with our positions and conclusions regarding certain tax positions, resulting in unanticipated costs, taxes or non-realization of expected benefits.

A tax authority may disagree with tax positions that we have taken, which could result in increased tax liabilities. For example, the Canadian Revenue Agency, the U.S. Internal Revenue Service or another tax authority could challenge our allocation of income by tax jurisdiction and the amounts paid between our affiliated companies pursuant to our intercompany arrangements and transfer pricing policies, including amounts paid with respect to our intellectual property development. Similarly, a tax authority could assert that we are subject to tax in a jurisdiction where we believe we have not established a taxable connection, often referred to as a "permanent establishment" under international tax treaties, and such an assertion, if successful, could increase our expected tax liability in one or more jurisdictions. A tax authority may take the position that material income tax liabilities, interest and penalties are payable by us, in which case, we expect that we might contest such assessment. Contesting such an assessment may be lengthy and costly and if we were unsuccessful in disputing the assessment, the implications could increase our anticipated effective tax rate, where applicable.

Our deductions and credits in respect of scientific research and experimental development expenditures may be challenged by the Canadian tax authorities.

The Canadian taxation authorities may not necessarily agree with our determinations of the expenses and tax credits claimed by us, including scientific research and experimental development expenses and related tax credits. If the Canadian taxation authorities successfully challenge such expenses or the correctness of such income tax credits claimed, our operating results could be adversely affected. Furthermore, if the Canadian taxation authorities reduce the tax credit by reducing either the rate of the credit or the eligibility of some scientific research and experimental development expenses in the future, our operating results could be adversely affected.

We are an “emerging growth company” and a “smaller reporting company” and we cannot be certain if the reduced reporting requirements applicable to emerging growth companies or smaller reporting companies will make our common shares less attractive to investors.

We are an “emerging growth company” as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. For as long as we continue to be an emerging growth company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies, including (i) not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, (ii) reduced disclosure obligations regarding executive compensation in this prospectus and our periodic reports and proxy statements and (iii) exemptions from the requirements of holding nonbinding advisory shareholder votes on executive compensation and shareholder approval of any golden parachute payments not approved previously. In addition, as an emerging growth company, we are only required to provide two years of audited financial statements and two years of selected financial data in this prospectus. Under the JOBS Act, emerging growth companies can also delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have elected to take advantage of the benefits of this extended transition period. Our financial statements may therefore not be comparable to those of companies that comply with such new or revised accounting standards. Until the date that we are no longer an “emerging growth company” or affirmatively and irrevocably opt out of the exemption provided by Section 7(a)(2)(B) of the Securities Act, upon issuance of a new or revised accounting standard that applies to our financial statements and that has a different effective date for public and private companies, we will disclose the date on which adoption is required for non-emerging growth companies and the date on which we will adopt the recently issued accounting standard.

We could be an emerging growth company until the last day of our fiscal year following the fifth anniversary of the completion of this offering, although circumstances could cause us to lose that status earlier, including if we are deemed to be a “large accelerated filer,” which occurs when the market value of our common shares that is held by non-affiliates equals or exceeds \$700.0 million as of the prior June 30, or if we have total annual gross revenue of \$1.07 billion or more during any fiscal year before that time, in which cases we would no longer be an emerging growth company as of the following December 31, or if we issue more than \$1.0 billion in non-convertible debt during any three-year period before that time, in which case we would no longer be an emerging growth company immediately.

We are also a “smaller reporting company,” meaning that the market value of our common shares held by non-affiliates is less than \$700 million and our annual revenue was less than \$100 million during our most recently completed fiscal year. We may continue to be a smaller reporting company if either (i) the market value of our common shares held by non-affiliates is less than \$250 million or (ii) our annual revenue was less than \$100 million during the most recently completed fiscal year and the market value of our common shares held by non-affiliates is less than \$700 million. If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act and reduced disclosure obligations regarding executive

[Table of Contents](#)

compensation in this prospectus and in our periodic reports and proxy statements. For so long as we remain a smaller reporting company, we are permitted and intend to rely on exemptions from certain disclosure and other requirements that are applicable to other public companies that are not smaller reporting companies.

We cannot predict if investors will find our common shares less attractive because we may rely on the exemptions and reduced disclosure obligations applicable to emerging growth companies and smaller reporting companies. If some investors find our common shares less attractive as a result, there may be a less active trading market for our common shares and our share price may be more volatile.

We will incur significantly increased costs as a result of operating as a public company, and our management will be required to devote substantial time to new compliance initiatives and corporate governance practices.

As a public company, and particularly after we are no longer an emerging growth company, we will incur significant legal, accounting and other expenses that we did not incur as a private company. The Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the listing requirements of the Nasdaq Stock Market and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives. Moreover, we expect these rules and regulations to substantially increase our legal and financial compliance costs and to make some activities more time consuming and costly. For example, we expect that these rules and regulations may make it more difficult and more expensive for us to obtain director and officer liability insurance and we may be required to incur substantial costs to maintain sufficient coverage. We cannot predict or estimate the amount or timing of additional costs we may incur to respond to these requirements. The impact of these requirements could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, our board committees or as executive officers. The increased costs may require us to reduce costs in other areas of our business or increase the prices of our services. Moreover, these rules and regulations are often subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices.

Our amended and restated bylaws to be in effect following the completion of this offering designate specific courts in Canada and the United States as the exclusive forum for certain litigation that may be initiated by our shareholders, which could limit our shareholders' ability to obtain a favorable judicial forum for disputes with us.

Pursuant to our amended and restated bylaws to be in effect following the completion of this offering, unless we consent in writing to the selection of an alternative forum, the courts of the Province of Québec and the appellate courts therefrom shall, to the fullest extent permitted by law, be the sole and exclusive forum for: (a) any derivative action or proceeding brought on our behalf; (b) any action or proceeding asserting a claim for breach of fiduciary duty owed to us by any of our directors, officers or other employees; (c) any action or proceeding asserting a claim arising out of any provision of the Business Corporations Act (Québec) or the articles or our bylaws (as either may be amended from time to time); or (d) any action or proceeding asserting a claim otherwise related to our affairs, or the Canadian Forum Provision. The Canadian Forum Provision will not apply to any causes of action arising under the Securities Act or the Exchange Act. Our amended and restated bylaws to be in effect following the completion of this offering further provide that unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States of America shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act, or the U.S. Federal Forum Provision. In addition, our amended and restated bylaws to be in effect following the completion of this offering provide that any person or entity holding, owning or otherwise acquiring any interest in any of our securities is deemed to have notice of and consented to the Canadian Forum Provision and the U.S. Federal Forum Provision.

[Table of Contents](#)

The Canadian Forum Provision and the U.S. Federal Forum Provision in our amended and restated bylaws to be in effect following the completion of this offering may impose additional litigation costs on shareholders in pursuing any such claims. Additionally, the forum selection clauses in our amended and restated bylaws to be in effect following the completion of this offering may limit our shareholders' ability to bring a claim in a judicial forum that they find favorable for disputes with us or our directors, officers or employees, which may discourage the filing of lawsuits against us and our directors, officers and employees, even though an action, if successful, might benefit our shareholders. In addition, while the Delaware Supreme Court ruled in March 2020 that federal forum selection provisions purporting to require claims under the Securities Act be brought in federal court are "facially valid" under Delaware law, there is uncertainty as to whether other courts, including courts in Canada and other courts within the United States, will enforce our U.S. Federal Forum Provision. If the U.S. Federal Forum Provision is found to be unenforceable, we may incur additional costs associated with resolving such matters. The U.S. Federal Forum Provision may also impose additional litigation costs on shareholders who assert that the provision is not enforceable or invalid. The courts of the Province of Québec and the federal district courts of the United States of America may also reach different judgments or results than would other courts, including courts where a shareholder considering an action may be located or would otherwise choose to bring the action, and such judgments may be more or less favorable to us than our shareholders.

Because we are a Canadian company, it may be difficult to serve legal process or enforce judgments against us.

We are incorporated and have our corporate headquarters in Québec, Canada. In addition, while many of our directors and officers reside in the United States, several of them reside outside of the United States. Accordingly, service of process upon us may be difficult to obtain within the United States. Furthermore, because substantially all of our assets are located outside the United States, any judgment obtained in the United States against us, including one predicated on the civil liability provisions of the U.S. federal securities laws, may not be collectible within the United States. Therefore, it may not be possible to enforce those actions against us.

In addition, it may be difficult to assert U.S. securities law claims in original actions instituted in Canada. Canadian courts may refuse to hear a claim based on an alleged violation of U.S. securities laws against us or these persons on the grounds that Canada is not the most appropriate forum in which to bring such a claim. Even if a Canadian court agrees to hear a claim, it may determine that Canadian law and not U.S. law is applicable to the claim. If U.S. law is found to be applicable, the content of applicable U.S. law must be proved as a fact, which can be a time-consuming and costly process. Certain matters of procedure will also be governed by Canadian law. Furthermore, it may not be possible to subject foreign persons or entities to the jurisdiction of the courts in Canada. Similarly, to the extent that our assets are located in Canada, investors may have difficulty collecting from us any judgments obtained in the U.S. courts and predicated on the civil liability provisions of U.S. securities provisions.

Following the completion of the offering, we will be governed by the corporate laws of Québec, which in some cases have a different effect on shareholders than the corporate laws of Delaware.

Following the completion of the offering, we will be governed by the QBCA 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 us 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 QBCA and Delaware General Corporation Law, or 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 QBCA generally requires a two-thirds majority vote by shareholders, whereas the DGCL generally only requires a majority vote; and (ii) under the QBCA, a holder of 10% or more of our common shares can requisition a special meeting of shareholders, whereas such right does not exist under the DGCL. Refer to the section titled "Description of Share Capital-Differences in Corporation Law" for more information.

Our amended and restated bylaws to be in effect following completion of this offering and certain Canadian legislation contain provisions that may have the effect of delaying or preventing certain change in control transactions or shareholder proposals.

Certain provisions of our amended and restated bylaws to be in effect following completion of this offering and certain Canadian legislation, together or separately, could discourage or delay certain change in control transactions or shareholder proposals.

Our amended and restated bylaws to be in effect following completion of this offering contain provisions that establish certain advance notice procedures for nomination of candidates for election as directors at shareholders' meetings. The QBCA requires that any shareholder proposal that includes nominations for the election of directors must be signed by one or more holders of shares representing in the aggregate not less than 5% of the shares or 5% of the shares of a class or series of shares of the corporation entitled to vote at the meeting to which the proposal is to be presented.

The Investment Canada Act requires that 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. Furthermore, limitations on the ability to acquire and hold our common shares may be imposed by the Competition Act (Canada). This legislation permits the Commissioner of Competition, or Commissioner, to review any acquisition or establishment, directly or indirectly, including through the acquisition of shares, of control over or of a significant interest in our company. Otherwise, there are no limitations either under the laws of Canada or Québec, or in our articles 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.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements about us and our industry that involve substantial risks and uncertainties. All statements other than statements of historical facts contained in this prospectus, including statements regarding our strategy, future financial condition, future operations, projected costs, prospects, plans, objectives of management and expected market growth, are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as “aim,” “anticipate,” “assume,” “believe,” “contemplate,” “continue,” “could,” “design,” “due,” “estimate,” “expect,” “goal,” “intend,” “may,” “objective,” “plan,” “predict,” “positioned,” “potential,” “seek,” “should,” “target,” “will,” “would” and other similar expressions that are predictions of or indicate future events and future trends, or the negative of these terms or other comparable terminology.

We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy and financial needs. These forward-looking statements are subject to a number of known and unknown risks, uncertainties and assumptions, including risks described in the section titled “Risk Factors” and elsewhere in this prospectus, regarding, among other things:

- the initiation, timing, progress and results of our current and future preclinical studies and clinical trials and related preparatory work and the period during which the results of the trials will become available, as well as our research and development programs;
- our estimates regarding expenses, future revenue, capital requirements and needs for additional financing;
- our ability to obtain regulatory approval of RP-3500 and any of our current and future product candidates that we develop;
- our ability to identify and develop additional product candidates using our SNIPRx platform;
- business disruptions affecting the initiation, patient enrollment, development and operation of our clinical trials, including a public health emergency, such as the recent global outbreak of the COVID-19 coronavirus;
- our expectations regarding the potential market size and the rate and degree of market acceptance for any product candidates that we develop;
- the effects of competition with respect to RP-3500 or any of our other current or future product candidates, as well as innovations by current and future competitors in our industry;
- our ability to fund our working capital requirements;
- our intellectual property position, including the scope of protection we are able to establish, maintain and enforce for intellectual property rights covering our product candidates;
- our financial performance and our ability to effectively manage our anticipated growth;
- our ability to obtain additional funding for our operations and our expected use of proceeds from this offering; and
- other risks and uncertainties, including those listed under the section titled “Risk Factors.”

The foregoing list of risks is not exhaustive. Other sections of this prospectus may include additional factors that could harm our business and financial performance. Moreover, we operate in a very competitive and rapidly changing environment. New risk factors emerge from time to time, and it is not possible for our management to predict all risk factors nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in, or implied by, any forward-looking statements.

[Table of Contents](#)

In light of the significant uncertainties in these forward-looking statements, you should not rely upon forward-looking statements as predictions of future events. Although we believe that we have a reasonable basis for each forward-looking statement contained in this prospectus, we cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur at all. You should refer to the section titled “Risk Factors” for a discussion of important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. Except as required by law, we undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise. The Private Securities Litigation Reform Act of 1995 and Section 27A of the Securities Act of 1933, as amended, do not protect any forward-looking statements that we make in connection with this offering.

You should read this prospectus and the documents that we reference in this prospectus and have filed as exhibits to the registration statement, of which this prospectus is a part, completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all forward-looking statements in this prospectus by these cautionary statements.

MARKET AND INDUSTRY DATA

Certain market and industry data included in this prospectus were obtained from independent third-party surveys, market research, publicly available information, reports of governmental agencies and industry publications and surveys. All market and industry data used in this prospectus involve a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. Although we are responsible for the disclosure contained in this prospectus and we believe the information from industry publications and other third-party sources included in this prospectus is reliable, such information is inherently imprecise. The industry in which we operate is subject to a high degree of uncertainty and risk due to a variety of factors, including those described in the section titled "Risk Factors." 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 to us from this offering will be approximately \$172.7 million (or approximately \$199.2 million if the underwriters exercise in full their option to purchase up to 1,500,000 additional common shares), based on an assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting fees and commissions and estimated offering expenses payable by us.

Each \$1.00 increase or decrease in the assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease the net proceeds to us from this offering by \$9.3 million, assuming that the number of common shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting fees and commissions and estimated offering expenses payable by us. Similarly, each increase or decrease of 1,000,000 in the number of common shares offered by us, as set forth on the cover of this prospectus, would increase or decrease the net proceeds to us by \$17.7 million, assuming the assumed initial public offering price per share remains the same and after deducting the estimated underwriting fees and commissions and estimated offering expenses payable by us.

As of March 31, 2020, we had cash of \$83.7 million. In May 2020, we entered into a collaboration and license agreement with Bristol Myers Squibb, pursuant to which Bristol Myers Squibb paid us an initial upfront fee payment of \$50.0 million and made an equity investment of \$15.0 million in our company. We currently intend to use the net proceeds from this offering, together with our existing cash, as follows:

- approximately \$50.0 million to advance clinical development of RP-3500 through completion of our planned open-label Phase 1/2 clinical trial;
- approximately \$110.0 million to fund other research and development initiatives; and
- the remainder to fund working capital and other general corporate purposes.

Based on our planned use of the net proceeds from this offering and our existing cash, including the \$65.0 million payment from Bristol Myers Squibb, we estimate that such funds will be sufficient to fund our operating expenses and capital expenditure requirements at least through 2022. We have based this estimate on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we expect. The expected net proceeds from this offering, together with our existing cash, will not be sufficient for us to fund any of our drug candidates through regulatory approval, and we will need to raise additional capital to complete the development and commercialization of our product candidates.

This expected use of the net proceeds from this offering represents our intentions based upon our current plans and prevailing business conditions, which could change in the future as such plans and conditions evolve. Predicting the cost necessary to develop product candidates can be difficult, and the amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our development, the status of and results from preclinical studies and clinical trials, any collaborations that we may enter into with third parties and any unforeseen cash needs. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering.

We may also use a portion of the remaining net proceeds to in-license, acquire or invest in complementary businesses, technologies, products or assets. However, we have no current commitments or obligations to do so.

Pending the use of the net proceeds from this offering as described above, we intend to invest the net proceeds in a variety of capital preservation instruments, including bank deposits, short-term, interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed United States or Canadian government obligations.

DIVIDEND POLICY

We have never declared or paid cash dividends on our share capital, and we do not currently intend to pay any cash dividends on our share capital in the foreseeable future. We currently intend to retain all available funds and any future earnings, if any, to fund the development and expansion of our business. Any future determination related to dividend policy will be made at the discretion of our board of directors, subject to applicable laws, and will depend upon, among other factors, our results of operations, financial condition, contractual restrictions and capital requirements. In addition, our ability to pay cash dividends on our share capital in the future may be limited by the terms of any future debt or preferred securities we issue or any credit facilities we enter into.

CAPITALIZATION

The following table sets forth our cash, and our capitalization as of March 31, 2020 on:

- an actual basis;
- a pro forma basis, giving effect to the conversion of all outstanding preferred shares into an aggregate of 21,558,393 common shares upon the completion of this offering; and
- a pro forma as adjusted basis, giving further effect to: (i) the sale of 10,000,000 common shares in this offering at an assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting fees and commissions and estimated offering expenses payable by us; (ii) the issuance of a warrant to an affiliate of Bristol Myers Squibb on May 26, 2020 for proceeds of \$15.0 million and the automatic exercise of the warrant into an aggregate of 789,474 common shares, based on an assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, and excluding the \$50.0 million upfront payment we received from Bristol Myers Squibb in connection with our entry into the collaboration and license agreement in May 2020; and (iii) the filing and effectiveness of our articles of continuance.

Our capitalization following the closing of this offering will depend on the actual initial public offering price and other terms of this offering determined at pricing. You should read this table together with the sections titled “Selected Consolidated Financial Data,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements and the related notes included elsewhere in this prospectus.

<u>(in thousands, except share and per share amounts)</u>	AS OF MARCH 31, 2020		
	ACTUAL	PRO FORMA	PRO FORMA AS ADJUSTED (1)
Cash	\$ 83,711	\$ 83,711	\$ 271,411
Series A preferred shares, no par value, unlimited shares authorized; 11,090,135 shares issued and outstanding, actual; unlimited shares authorized, no shares issued or outstanding, pro forma; no shares authorized, issued or outstanding, pro forma as adjusted	\$ 53,749	\$ —	\$ —
Series B preferred shares, no par value, unlimited shares authorized; 10,468,258 shares issued and outstanding, actual; unlimited shares authorized, no shares issued or outstanding, pro forma; no shares authorized, issued or outstanding, pro forma as adjusted	\$ 82,248	\$ —	\$ —
Shareholders’ (deficit) equity:			
Preferred shares, no par value, no shares authorized, issued and outstanding, actual and pro forma; unlimited shares authorized and no shares issued and outstanding, pro forma as adjusted	—	—	—
Common shares, no par value, unlimited shares authorized, 1,709,692 shares issued and outstanding, actual; unlimited shares authorized, 23,268,085 shares issued and outstanding, pro forma; unlimited shares authorized, 34,057,559 shares issued and outstanding, pro forma as adjusted	521	136,518	324,218
Additional paid-in capital	3,886	3,886	3,886
Accumulated deficit	(62,542)	(62,542)	(62,542)
Total shareholders’ (deficit) equity	(58,135)	77,862	265,562
Total capitalization	\$ 77,862	\$ 77,862	\$ 265,562

- (1) Each \$1.00 increase or decrease in the assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease each of pro forma as adjusted cash, common shares, total shareholders' (deficit) equity and total capitalization by \$9.3 million, assuming that the number of common shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting fees and commissions and estimated offering expenses payable by us. Similarly, each increase or decrease of 1,000,000 in the number of common shares offered by us would increase or decrease each of pro forma as adjusted cash, common shares, total shareholders' (deficit) equity and total capitalization by \$17.7 million, assuming that the assumed initial public offering price remains the same and after deducting estimated underwriting fees and commissions and estimated offering expenses payable by us.

The number of common shares outstanding after this offering is based on 24,057,559 common shares outstanding as of March 31, 2020, which gives effect to (i) the conversion of all outstanding preferred shares into an aggregate of 21,558,393 common shares and (ii) the automatic exercise of the warrant held by an affiliate of Bristol Myers Squibb into an aggregate of 789,474 common shares, based on an assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, in each case effected immediately prior to the completion of this offering, and excludes:

- 3,323,801 common shares issuable upon the exercise of outstanding options as of March 31, 2020, at a weighted-average exercise price of \$2.09 per share;
- 569,016 common shares reserved for future issuance under our Existing Plan as of March 31, 2020, which shares will cease to be available for future issuance immediately prior to the time that our 2020 Plan becomes effective in connection with this offering;
- 278,373 common shares issuable upon the exercise of outstanding options granted after March 31, 2020, at a weighted-average exercise price of \$8.60 per share;
- the exercise of outstanding options subsequent to March 31, 2020 into an aggregate of 85,369 common shares, at a weighted-average exercise price of \$1.92 per share;
- 3,600,000 common shares reserved for future issuance under our 2020 Plan (of which 590,702 common shares issuable upon the exercise of options will be granted contingent and effective upon the execution of the underwriting agreement for this offering), which will become effective immediately prior to the execution of the underwriting agreement related to this offering, as well as any future increases in the number of common shares reserved for issuance under our 2020 Plan; and
- 327,000 common shares reserved for future issuance under our ESPP, which will become effective immediately prior to the execution of the underwriting agreement related to this offering, as well as any future increases in the number of common shares reserved for issuance under our ESPP.

DILUTION

If you invest in our common shares in this offering, your ownership interest will be diluted immediately to the extent of the difference between the initial public offering price per common share and the pro forma as adjusted net tangible book value per common share after this offering.

Our historical net tangible book deficit as of March 31, 2020 was \$58.1 million, or (\$34.00) per common share. Our historical net tangible book deficit represents our total tangible assets less total liabilities and preferred shares. Historical net tangible book deficit per share is our historical net tangible book deficit divided by the number of common shares outstanding as of March 31, 2020.

Our pro forma net tangible book value as of March 31, 2020 was \$77.9 million, or \$3.35 per common share, which gives effect to the conversion of all outstanding preferred shares into an aggregate of 21,558,393 common shares immediately prior to the completion of this offering. Pro forma net tangible book value per share is our pro forma net tangible book value divided by the number of common shares deemed to be outstanding as of March 31, 2020.

After giving further effect to (i) the sale of 10,000,000 common shares in this offering at an assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, and after deducting the estimated underwriting fees and commissions and estimated offering expenses payable by us, and (ii) the automatic exercise of the warrant held by an affiliate of Bristol Myers Squibb into an aggregate of 789,474 common shares, based on an assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, our pro forma as adjusted net tangible book value as of March 31, 2020 would have been \$265.6 million, or \$7.80 per share. This represents an immediate increase in pro forma as adjusted net tangible book value of \$4.45 per share to our existing shareholders and an immediate dilution of \$11.20 per share to new investors participating in this offering.

The following table illustrates this dilution on a per share basis:

Assumed initial public offering price per share	\$19.00
Historical net tangible book deficit per share as of March 31, 2020	\$(34.00)
Pro forma increase in net tangible book value per share as of March 31, 2020 attributable to pro forma transactions described above	37.35
Pro forma net tangible book value per share as of March 31, 2020	3.35
Increase in pro forma net tangible book value per share attributable to new investors participating in this offering	4.45
Pro forma as adjusted net tangible book value per share after this offering	7.80
Dilution per share to new investors participating in this offering	<u>\$11.20</u>

Each \$1.00 increase or decrease in the assumed initial public offering price of \$19.00, the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease our pro forma as adjusted net tangible book value per share after this offering by \$0.28 per share and the dilution per share to new investors participating in this offering by \$0.72 per share, assuming that the number of common shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting fees and commissions and estimated offering expenses payable by us. Similarly, an increase of 1,000,000 in the number of common shares offered by us would increase the pro forma as adjusted net tangible book value after this offering by \$0.28 per share and decrease the dilution per share to new investors participating in this offering by \$0.28 per share, and a decrease of 1,000,000 in the number of common shares offered by us would decrease the pro forma as adjusted net tangible book value by \$0.30 per share, and increase the dilution per share to new investors in this offering by \$0.30 per share, assuming that the assumed initial public offering price remains the same and after deducting estimated underwriting fees and commissions and estimated offering expenses payable by us.

[Table of Contents](#)

If the underwriters exercise in full their option to purchase up to 1,500,000 additional common shares, the pro forma as adjusted net tangible book value per share after giving effect to this offering would be \$8.21 per share and dilution to new investors participating in this offering would be \$10.79 per share.

The following table summarizes, on the pro forma as adjusted basis described above, the differences between the number of shares purchased from us on an as converted basis, the total consideration paid and the weighted average price per share paid by existing shareholders and by investors purchasing shares in this offering at the assumed initial public offering price of \$19.00 per share, which is the midpoint of the price range set forth on the cover page on this prospectus, before deducting estimated underwriting fees and commissions and estimated offering expenses payable by us:

	SHARES PURCHASED		TOTAL CONSIDERATION		AVERAGE PRICE PER SHARE
	NUMBER	PERCENT	AMOUNT	PERCENT	
Existing shareholders	23,268,085	68.3%	\$135,247,081	39.7%	\$ 5.81
New investors	10,789,474	31.7%	\$205,000,000	60.3%	\$ 19.00
Total	34,057,559	100%	\$340,247,081	100%	\$ 9.99

If the underwriters exercise their option to purchase additional shares in full, our existing shareholders would own 65.4% and our new investors would own 34.6% of the total number of our common shares outstanding upon the completion of this offering.

The foregoing discussion and tables are based on 24,057,559 common shares outstanding as of March 31, 2020, which gives effect to (i) the conversion of all outstanding preferred shares into an aggregate of 21,558,393 common shares and (ii) the automatic exercise of the warrant held by an affiliate of Bristol Myers Squibb into an aggregate of 789,474 common shares, based on an assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, in each case effected immediately prior to the completion of this offering, and excludes:

- 3,323,801 common shares issuable upon the exercise of outstanding options as of March 31, 2020, at a weighted-average exercise price of \$2.09 per share;
- 569,016 common shares reserved for future issuance under our Existing Plan as of March 31, 2020, which shares will cease to be available for future issuance immediately prior to the time that our 2020 Plan becomes effective in connection with this offering;
- 278,373 common shares issuable upon the exercise of outstanding options granted after March 31, 2020, at a weighted-average exercise price of \$8.60 per share;
- the exercise of outstanding options subsequent to March 31, 2020 into an aggregate of 85,369 common shares, at a weighted-average exercise price of \$1.92 per share;
- 3,600,000 common shares reserved for future issuance under our 2020 Plan (of which 590,702 common shares issuable upon the exercise of options will be granted contingent and effective upon the execution of the underwriting agreement for this offering), which will become effective immediately prior to the execution of the underwriting agreement related to this offering, as well as any future increases in the number of common shares reserved for issuance under our 2020 Plan; and
- 327,000 common shares reserved for future issuance under our ESPP, which will become effective immediately prior to the execution of the underwriting agreement related to this offering, as well as any future increases in the number of common shares reserved for issuance under our ESPP.

To the extent that outstanding options are exercised, new options or other equity awards are issued under our equity incentive plans, or we issue additional shares in the future, there will be further dilution to investors purchasing shares in this offering. Assuming the exercise of all of our outstanding options as of March 31, 2020,

[Table of Contents](#)

the number of shares held by existing shareholders would increase to 71.1% of the total number of shares to be outstanding after this offering, and the number of shares held by investors participating in this offering would be reduced to 28.9% of the total number of shares to be outstanding after this offering. Additionally, the total consideration paid to us by existing shareholders would be \$142.2 million, or 41.0%, of the total consideration paid for our outstanding shares, and the total consideration paid to us by investors participating in this offering would be 59.0% of the total consideration paid for our outstanding shares. The weighted average price per share paid to us by existing shareholders would be \$5.35 and the weighted average price per share paid to us by investors participating in this offering would not change. In addition, we may choose to raise additional capital because of market conditions or strategic considerations, even if we believe that we have sufficient funds for our current or future operating plans. If we raise additional capital through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our shareholders.

SELECTED CONSOLIDATED FINANCIAL DATA

The following tables set forth our financial data for the periods indicated. We have derived the selected consolidated statement of operations data for the years ended December 31, 2017, 2018 and 2019, and the selected consolidated balance sheet data as of December 31, 2018 and 2019, from our audited consolidated financial statements appearing elsewhere in this prospectus. We have derived the summary consolidated statements of operations data for the three-month periods ended March 31, 2019 and 2020 and the summary consolidated balance sheet data as of March 31, 2020 from our unaudited condensed consolidated financial statements appearing elsewhere in this prospectus. Our historical results are not necessarily indicative of the results that may be expected for any period in the future.

You should read the following selected consolidated financial data together with the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements and the related notes included elsewhere in this prospectus. The selected consolidated financial data included in this section are not intended to replace the consolidated financial statements and are qualified in their entirety by the consolidated financial statements and the related notes included elsewhere in this prospectus.

	YEAR ENDED DECEMBER 31,			THREE MONTHS ENDED MARCH 31,	
	2017	2018	2019	2019	2020
(in thousands, except share and per share amounts)					
Summary of Consolidated Operations Data:					
Operating expenses:					
Research and development, net of tax credits	\$ 4,401	\$ 9,906	\$ 20,995	\$ 3,703	\$ 8,632
General and administrative	1,774	2,914	5,382	1,076	2,183
Total operating expenses	<u>6,175</u>	<u>12,820</u>	<u>26,377</u>	<u>4,779</u>	<u>10,815</u>
Loss from operations	(6,175)	(12,820)	(26,377)	(4,779)	(10,815)
Other (expense) income, net:					
Realized and unrealized (loss) gain on foreign exchange, net	(147)	(292)	712	72	(1,731)
Change in fair value of convertible notes	(1,615)	—	—	—	—
Change in fair value of series A preferred share tranche obligation	180	(1,130)	(1,350)	(20)	—
Other expense	(39)	(6)	(6)	(2)	(2)
Total other expense, net	<u>(1,621)</u>	<u>(1,428)</u>	<u>(644)</u>	<u>50</u>	<u>(1,733)</u>
Loss before income taxes	(7,796)	(14,248)	(27,021)	(4,729)	(12,548)
Income tax expense	—	(35)	(195)	(109)	(53)
Net loss and comprehensive loss	<u>\$ (7,796)</u>	<u>\$ (14,283)</u>	<u>\$ (27,216)</u>	<u>\$ (4,838)</u>	<u>\$ (12,601)</u>
Net loss per share: ⁽¹⁾					
Basic and diluted	<u>\$ (5.12)</u>	<u>\$ (9.35)</u>	<u>\$ (17.81)</u>	<u>\$ (3.17)</u>	<u>\$ (7.71)</u>
Weighted average shares used in computing net loss per share: ⁽¹⁾					
Basic and diluted	<u>1,522,544</u>	<u>1,528,374</u>	<u>1,528,374</u>	<u>1,528,374</u>	<u>1,634,056</u>
Pro forma net loss per share (unaudited): ⁽¹⁾					
Basic and diluted			<u>\$ (1.64)</u>		<u>\$ (0.54)</u>
Weighted average shares outstanding used in computing pro forma net loss per share (unaudited): ⁽¹⁾					
Basic and diluted			<u>15,790,631</u>		<u>23,192,449</u>

(1) See Note 13 to our audited consolidated financial statements and Note 7 to our unaudited condensed consolidated financial statements included elsewhere in this prospectus for an explanation of the calculations of our basic and diluted

[Table of Contents](#)

net loss per share, pro forma net loss per share and the weighted-average number of shares used in the computation of the per share amounts.

	<u>AS OF DECEMBER 31,</u>		<u>AS OF MARCH 31,</u>
	<u>2018</u>	<u>2019</u>	<u>2020</u>
	(in thousands)		
Consolidated Balance Sheet Data:			
Cash	\$ 10,731	\$ 94,797	\$ 83,711
Working capital(1)	10,143	94,326	80,578
Total assets	13,925	102,695	93,569
Convertible preferred shares	31,873	135,997	135,997
Accumulated deficit	(22,725)	(49,941)	(62,542)
Total shareholders' deficit	(22,384)	(46,129)	(58,135)

(1) We define working capital as current assets less current liabilities.

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

You should read the following discussion and analysis of our financial condition and results of operations together with the "Selected Consolidated Financial Data" section of this prospectus and our audited consolidated financial statements and related notes, as well as our unaudited condensed consolidated financial statements and related notes, appearing elsewhere in this prospectus. Some of the information contained in this discussion and analysis or set forth elsewhere in this prospectus, including information with respect to our plans and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties. As a result of many factors, including those factors set forth in the "Risk Factors" section of this prospectus, our actual results could differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

We are a leading precision oncology medicine company enabled by our proprietary synthetic lethality insights for the discovery and development of novel therapeutics. Synthetic lethality, or SL, represents a clinically validated approach to drug development. We use our proprietary genome-wide, CRISPR-enabled SNIPRx platform to systematically discover and develop highly targeted cancer therapies focused on genomic instability, including DNA damage repair. SL arises when a deficiency in either of two genes is tolerated in cells, but simultaneous deficiencies in both genes cause cell death. Cancer cells that contain a mutation in one gene of a SL pair are thus susceptible to therapeutic intervention targeting the other gene pair.

Since our inception in September 2016, we have focused primarily on raising capital, organizing and staffing our company, conducting discovery and research activities, identifying potential SL gene pairs, establishing and protecting our intellectual property portfolio including for our proprietary SNIPRx platform, developing and progressing our product candidates through preclinical studies and preparing for clinical trials and establishing arrangements with third parties for the manufacture of initial quantities of our product candidates and component materials. We do not have any product candidates approved for sale and have not generated any revenue from product sales. Since our inception, we have funded our operations primarily through equity financings, and have raised an aggregate of approximately \$135.2 million of gross proceeds from the sale of our preferred shares. As of March 31, 2020, we had cash on hand of \$83.7 million.

Since inception, we have incurred significant operating losses. Our net losses were \$7.8 million, \$14.3 million and \$27.2 million for the years ended December 31, 2017, 2018 and 2019, respectively and \$12.6 million for the three-month period ended March 31, 2020. As of March 31, 2020, we had an accumulated deficit of \$62.5 million. We expect to continue to incur significant and increasing expenses and operating losses for the foreseeable future, as we advance our product candidates, including RP-3500, through preclinical and clinical development and seek regulatory approvals, manufacture drug product and drug supply, maintain and expand our intellectual property portfolio, as well as hire additional personnel, pay for accounting, audit, legal, regulatory and consulting services, and pay costs associated with maintaining compliance with Nasdaq listing rules and the requirements of the U.S. Securities and Exchange Commission, or SEC, director and officer liability insurance, investor and public relations activities and other expenses associated with operating as a public company. Our net losses may fluctuate significantly from quarter-to-quarter and year-to-year, depending on the timing of our preclinical studies, our clinical trials and our expenditures on other research and development activities.

We do not have any products approved for sale. We will not generate revenue from product sales unless and until we successfully complete clinical development and obtain regulatory approval for our product candidates, if ever. In addition, if we obtain regulatory approval for our product candidates and do not enter into a third-party commercialization partnership, we expect to incur significant expenses related to developing our commercialization capability to support product sales, marketing, manufacturing and distribution activities. As a

[Table of Contents](#)

result, we will need substantial additional funding to support our continuing operations and pursue our growth strategy. Until we can generate significant revenue from product sales, if ever, we expect to finance our operations through a combination of public or private equity offerings and debt financings or other sources, such as potential collaboration agreements, strategic alliances and licensing arrangements. We may be unable to raise additional funds or enter into such other agreements or arrangements when needed on acceptable terms, or at all. Our failure to raise capital or enter into such agreements as, and when, needed, could have a negative effect on our business, results of operations and financial condition.

In May 2020, we entered into a collaboration and license agreement with Bristol-Myers Squibb Company, or Bristol Myers Squibb, pursuant to which we and Bristol Myers Squibb have agreed to collaborate in the research and development of potential new product candidates for the treatment of cancer. We are providing Bristol Myers Squibb access to a selected number of our existing early SNIPRx screening campaigns and novel campaigns. The collaboration consists of programs directed to both druggable targets and to targets commonly considered undruggable by traditional small molecule approaches. As part of the agreement, Bristol Myers Squibb paid us an initial upfront fee payment of \$50.0 million and made an equity investment of \$15.0 million into our company. We will also be eligible to receive up to \$301 million in total milestones per program subject upon the achievement of certain specified research, development, regulatory and commercial milestones. See “Business—Collaborations and License Agreements—Collaboration and License Agreement with Bristol-Myers Squibb Company” for additional information.

COVID-19 Business Update

With the global spread of the ongoing COVID-19 pandemic in the first quarter of 2020, we established a cross-functional task force and have implemented business continuity plans designed to address and mitigate the impact of the COVID-19 pandemic on our employees and our business, including our preclinical studies and planned clinical trials. Our operations are considered as an essential business and we are continuing to operate during this period. We have taken measures to secure our research and development activities, while work in laboratories and facilities has been organized to reduce risk of COVID-19 transmission. While we are experiencing limited financial impacts at this time, given the global economic slowdown, the overall disruption of global healthcare systems and the other risks and uncertainties associated with the pandemic, our business, financial condition and results of operations could be materially adversely affected. We continue to closely monitor the COVID-19 pandemic as we evolve our business continuity plans, clinical development plans and response strategy.

In addition, our planned clinical trials may be affected by the COVID-19 pandemic, including (i) delays or difficulties in enrolling and retaining patients in our planned clinical trials, including patients that may not be able or willing to comply with clinical trial protocols if quarantines impede patient movement or interrupt healthcare services; (ii) delays or difficulties in clinical site initiation, including difficulties in recruiting and retaining clinical site investigators and clinical site staff; (iii) 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, and because, who, as healthcare providers, may have heightened exposure to COVID-19 and adversely impact our clinical trial operations; (iv) interruption of our future clinical supply chain or key clinical trial activities, such as clinical trial site monitoring, due to limitations on travel imposed or recommended by federal, state/provincial or municipal governments, employers and others; and (v) limitations in employee resources that would otherwise be focused on the conduct of our planned clinical trials, including because of sickness of employees or their families or the desire of employees to avoid contact with large groups of people.

Components of Results of Operations

Revenue

To date, we have not recognized any revenue from any sources, including from product sales, and we do not expect to generate any revenue from the sale of products in the foreseeable future. If our development efforts for our product candidates are successful and result in regulatory approval, or license agreements with third parties, we may generate revenue in the future from product sales. However, there can be no assurance as to when we will generate such revenue, if at all.

Collaboration Agreement with Ono Pharmaceutical Company Ltd.

In January 2019, we entered into a research services, license and collaboration agreement with Ono Pharmaceutical Company Ltd., or Ono, pursuant to which we and Ono have agreed to collaborate in the research of potential product candidates targeting Polq and the development of our small molecule Polq inhibitor program. Pursuant to the terms of the agreement, we received initial upfront payments of approximately \$8.1 million. These upfront payments have been recorded as deferred revenue on our balance sheet as of December 31, 2019 and March 31, 2020 as per our revenue recognition accounting policy and will be recognized as revenue at the point in time when a product candidate is licensed to Ono pursuant to the terms of the agreement. Refer to Notes 2 and 10 to our annual consolidated financial statements included elsewhere in this prospectus for additional information regarding our revenue recognition accounting policy and our collaboration agreement with Ono.

Operating Expenses

Research and Development Expenses

Research and development expenses consist primarily of costs incurred for our research activities, including our drug discovery efforts and the development of our product candidates. We expense research and development costs as incurred, which include:

- external research and development expenses incurred under agreements with contract research organizations, or CROs, as well as investigative sites and consultants that conduct our clinical trials, preclinical studies and other scientific development services;
- employee-related expenses, including salaries, bonuses, benefits, share-based compensation, other related costs for those employees involved in research and development efforts;
- costs related to manufacturing material for our preclinical studies and clinical trials, including fees paid to CMOs;
- laboratory supplies and research materials;
- upfront, milestone and maintenance fees incurred under license, acquisition and other third-party agreements;
- costs related to compliance with regulatory requirements; and
- facilities, depreciation, scientific advisory board and other allocated expenses, which include direct and allocated expenses for rent, maintenance of facilities and equipment, insurance, equipment and software.

Costs for certain activities are recognized based on an evaluation of the progress to completion of specific tasks using data such as information provided to us by our vendors and analyzing the progress of our preclinical

[Table of Contents](#)

studies or other services performed. Significant judgment and estimates are made in determining the accrued expense balances at the end of any reporting period.

We characterize research and development costs incurred prior to the identification of a product candidate as discovery costs. We characterize costs incurred once a product candidate has been identified as development costs.

Our direct external research and development expenses consist primarily of fees paid to outside consultants, CROs, CMOs and research laboratories in connection with our preclinical development, process development, manufacturing and clinical development activities. Our direct external research and development expenses also include fees incurred under license, acquisition and option agreements. We track these external research and development costs on a program-by-program basis once we have identified a product candidate.

We do not allocate employee costs, costs associated with our discovery efforts, laboratory supplies, and facilities, including depreciation or other indirect costs, to specific programs because these costs are deployed across multiple programs and, as such, are not separately classified. We use internal resources primarily to conduct our research and discovery activities as well as for managing our preclinical development, process development, manufacturing and clinical development activities.

The following table summarizes our research and development costs:

	Year Ended December 31,			Three Months Ended March 31,	
	2017	2018	2019	2019	2020
	(in thousands)				
Discovery costs					
Direct external costs	\$2,259	\$ 3,918	\$ 7,004	\$ 1,371	\$ 2,013
Laboratory supplies and research materials	687	1,788	3,154	765	965
Personnel related costs	1,129	3,155	4,476	1,056	1,327
Facilities related costs	64	399	416	144	111
Other costs	424	976	1,678	486	506
	<u>4,563</u>	<u>10,236</u>	<u>16,728</u>	<u>3,822</u>	<u>4,922</u>
Development					
RP-3500 program (direct external costs)	—	—	3,512	—	2,846
Personnel related costs	—	—	1,017	—	870
Facilities related costs	—	—	304	—	121
Other costs	—	—	—	—	63
	<u>—</u>	<u>—</u>	<u>4,833</u>	<u>—</u>	<u>3,900</u>
R&D tax credits	(162)	(330)	(566)	(119)	(191)
Total research and development costs	<u>\$4,401</u>	<u>\$ 9,906</u>	<u>\$ 20,995</u>	<u>\$ 3,703</u>	<u>\$ 8,632</u>

The successful development of our product candidates is highly uncertain. We plan to substantially increase our research and development expenses for the foreseeable future as we continue the development of our product candidates and manufacturing processes and conduct discovery and research activities for our preclinical programs. We cannot determine with certainty the timing of initiation, the duration or the completion costs of current or future preclinical studies and clinical trials of our product candidates due to the inherently unpredictable nature of preclinical and clinical development. Clinical and preclinical development timelines, the probability of success and development costs can differ materially from expectations. We anticipate that we will make determinations as to which product candidates to pursue and how much funding to direct to each product candidate on an ongoing basis in response to the results of ongoing and future preclinical studies and clinical trials, regulatory developments and our ongoing assessments as to each product candidate's commercial potential. We will need to raise substantial additional capital in the future. Our clinical development costs are expected to increase significantly as we commence clinical trials. We anticipate that our expenses will increase

[Table of Contents](#)

substantially, particularly due to the numerous risks and uncertainties associated with developing product candidates, including the uncertainty of:

- the scope, rate of progress, and expenses of our ongoing research activities as well as any preclinical studies, clinical trials and other research and development activities;
- establishing an appropriate safety profile;
- successful enrollment in and completion of clinical trials;
- whether our product candidates show safety and efficacy in our clinical trials;
- receipt of marketing approvals from applicable regulatory authorities;
- establishing commercial manufacturing capabilities or making arrangements with third-party manufacturers;
- obtaining and maintaining patent and trade secret protection and regulatory exclusivity for our product candidates;
- commercializing product candidates, if and when approved, whether alone or in collaboration with others; and
- continued acceptable safety profile of products following any regulatory approval.

Any changes in the outcome of any of these variables with respect to the development of our product candidates in preclinical and clinical development could mean a significant change in the costs and timing associated with the development of these product candidates. We may never succeed in achieving regulatory approval for any of our product candidates. We may obtain unexpected results from our clinical trials. We may elect to discontinue, delay or modify clinical trials of some product candidates or focus on other product candidates. For example, if the FDA, EMA or another regulatory authority were to delay our planned start of clinical trials or require us to conduct clinical trials or other testing beyond those that we currently expect or if we experience significant delays in enrollment in any of our planned clinical trials, we could be required to expend significant additional financial resources and time on the completion of clinical development of that product candidate.

General and Administrative Expenses

General and administrative expense consists primarily of employee related costs, including salaries, bonuses, benefits, share-based compensation and other related costs, as well as expenses for outside professional services, including legal, accounting and audit services and other consulting fees, rent expense, and other general administrative expenses.

We anticipate that our general and administrative expenses will increase in the future as we increase our headcount to support our continued research activities and development of our product candidates. We also anticipate that we will incur significantly increased accounting, audit, legal, regulatory, compliance and director and officer insurance costs as well as investor and public relations expenses associated with operating as a public company.

Other (Expense) Income, Net

Other (expense) income, net consists primarily of changes in the fair value of convertible notes and Series A preferred share tranche obligations, as well as realized and unrealized gains and losses on foreign exchange and other expenses such as interest and bank charges.

Changes in the fair value of convertible notes consisted of losses on the re-measurement at fair value at each reporting date of the convertible notes liability as we elected the fair value option to account for our convertible

[Table of Contents](#)

notes. As of June 2017, in connection with our Series A preferred financing, the outstanding convertible notes were converted into shares of Series A preferred shares and as such, the convertible notes liability was extinguished.

Changes in the fair value of the Series A preferred share tranche obligation consisted of gains and losses on the re-measurement at fair value at each reporting date of the tranche obligation, arising from the obligation and right to make future issuances of Series A preferred shares. As of September 2019, in connection with the issuance and sale of Series B preferred shares, the final Series A preferred tranche obligation was extinguished and recognized as additional paid-in-capital.

Realized and unrealized gains and losses on foreign exchange consist of realized and unrealized gains and losses from holding cash and restricted cash in foreign currency and foreign currency denominated research and development tax credits receivable, other receivables, accounts payable, accrued expenses and other current liabilities as well as operating lease liabilities.

Results of Operations

Comparison of the Three Months Ended March 31, 2019 and 2020

The following table summarizes our results of operations for the three months ended March 31, 2019 and 2020:

	THREE MONTHS ENDED MARCH 31,		CHANGE
	2019	2020	
	(in thousands)		
Operating expenses:			
Research and development, net of tax credits	\$ 3,703	\$ 8,632	\$ 4,929
General and administrative	1,076	2,183	1,107
Total operating expenses	4,779	10,815	6,036
Loss from operations	(4,779)	(10,815)	(6,036)
Other (expense) income, net:			
Realized and unrealized gain (loss) on foreign exchange	72	(1,731)	(1,803)
Change in fair value of Series A preferred share tranche obligation	(20)	—	20
Other expense	(2)	(2)	0
Total other expense, net	50	(1,733)	(1,783)
Loss before income taxes	(4,729)	(12,548)	(7,819)
Income tax expense	(109)	(53)	56
Net loss and comprehensive loss	<u>\$ (4,838)</u>	<u>\$ (12,601)</u>	<u>\$ (7,763)</u>

Research and Development Expenses, Net of Tax Credits

Research and development expenses were \$8.6 million for the three months ended March 31, 2020, compared to \$3.7 million for the three months ended March 31, 2019. The increase of \$4.9 million was primarily due to a:

- \$3.5 million increase in direct external costs for both discovery and development activities as a result of our increased efforts towards identifying a product candidate and advancing the development of RP-3500;
- \$1.1 million increase in personnel related expenses in support of our increased discovery and development activities;

[Table of Contents](#)

- \$0.2 million increase in lab supplies and research materials as a result of our increased efforts towards identifying a product candidate; and
- \$0.1 million net increase in other research and development costs in support of increased research and development activities.

General and Administrative Expenses

General and administrative expenses were \$2.2 million for the three months ended March 31, 2020, compared to \$1.1 million for the three months ended March 31, 2019. The increase of \$1.1 million consisted of a \$0.4 million increase in payroll and personnel related costs, a \$0.3 million increase in legal and professional fees and a \$0.4 million increase in other general and administrative expenses, related to costs associated with operating activities and the preparations for becoming a public company.

Other Expense, Net

Other expense, net was \$1.7 million for the three months ended March 31, 2020, compared to other income, net of \$0.1 million for the three months ended March 31, 2019. The increase of \$1.8 million in other expenses is primarily attributable to an increase of \$1.8 million in unrealized losses on foreign exchange as a result of fluctuations in foreign exchange rates, as well as higher foreign currency-denominated cash, other receivables and research and development tax credits receivable balances held in the first quarter of 2020. From December 31, 2019 to March 31, 2020, the relative value of the U.S. dollar to the Canadian dollar increased by approximately 8%.

Income Tax Expense

Income tax expense was \$0.1 million for the three months ended March 31, 2020, reflecting taxable income in our U.S. subsidiary. Income tax expense was \$0.1 million for the three months ended March 31, 2019, reflecting withholding taxes on one of the upfront payments under our collaboration agreement with Ono as well as taxable income in our U.S. subsidiary.

Net Loss

We had net losses of \$4.8 million and \$12.6 million for the three months ended March 31, 2019 and 2020, respectively.

[Table of Contents](#)

Comparison of the Years Ended December 31, 2018 and 2019

The following table summarizes our results of operations for the years ended December 31, 2018 and 2019:

	YEAR ENDED DECEMBER 31,		CHANGE
	2018	2019	
	(in thousands)		
Operating expenses:			
Research and development, net of tax credits	\$ 9,906	\$ 20,995	\$ 11,089
General and administrative	2,914	5,382	2,468
Total operating expenses	12,820	26,377	13,557
Loss from operations	(12,820)	(26,377)	(13,557)
Other (expense) income, net:			
Realized and unrealized gain (loss) on foreign exchange	(292)	712	1,004
Change in fair value of Series A preferred share tranche obligation	(1,130)	(1,350)	(220)
Other expense	(6)	(6)	—
Total other expense, net	(1,428)	(644)	784
Loss before income taxes	(14,248)	(27,021)	(12,773)
Income tax expense	(35)	(195)	(160)
Net loss and comprehensive loss	<u>\$ (14,283)</u>	<u>\$ (27,216)</u>	<u>\$ (12,933)</u>

Research and Development Expenses, Net of Tax Credits

Research and development expenses were \$21.0 million for the year ended December 31, 2019, compared to \$9.9 million for the year ended December 31, 2018. The increase of \$11.1 million was primarily due to a:

- \$6.6 million increase in direct external costs for both discovery and development activities as a result of our increased efforts towards identifying a product candidate and advancing the development of RP-3500;
- \$2.3 million increase in personnel related expenses in support of our increased discovery and development activities;
- \$1.4 million increase in lab supplies and research materials as a result of our increased efforts towards identifying a product candidate; and
- \$0.8 million net increase in other research and development costs in support of increased research and development activities.

General and Administrative Expenses

General and administrative expenses were \$5.4 million for the year ended December 31, 2019, compared to \$2.9 million for the year ended December 31, 2018. The increase of \$2.5 million consisted of a \$1.1 million increase in payroll and personnel related costs, a \$0.7 million increase in legal and professional fees and a \$0.7 million increase in other general and administrative expenses, related to costs associated with operating activities and the preparations for becoming a public company.

Other Expense, Net

Other expense, net was \$0.6 million for the year ended December 31, 2019, compared to \$1.4 million for the year ended December 31, 2018. The decrease of \$0.8 million is primarily attributable to an increase of \$1.0 million in realized and unrealized gains on foreign exchange as a result of fluctuations in foreign exchange

[Table of Contents](#)

rates, as well as higher foreign currency-denominated cash balances held in 2019, partially offset by a \$0.2 million increase in changes in the fair value of our Series A preferred share tranche obligation year over year.

Income Tax Expense

Income tax expense was \$0.2 million for the year ended December 31, 2019. This expense was primarily attributed to withholding taxes on one of the upfront payments under our collaboration agreement with Ono as well as higher taxable income in our U.S. subsidiary. Income tax expense was \$0.03 million for the year ended December 31, 2018, reflecting taxable income in our U.S. subsidiary.

Net Loss

We had net losses of \$14.3 million and \$27.2 million for the years ended December 31, 2018 and 2019, respectively.

Comparison of the Years Ended December 31, 2017 and 2018

The following table summarizes our results of operations for the years ended December 31, 2017 and 2018:

	YEAR ENDED DECEMBER 31,		CHANGE
	2017	2018	
	(in thousands)		
Operating expenses:			
Research and development, net of tax credits	\$ 4,401	\$ 9,906	\$ 5,505
General and administrative	1,774	2,914	1,140
Total operating expenses	6,175	12,820	6,645
Loss from operations	(6,175)	(12,820)	(6,645)
Other (expense) income, net:			
Realized and unrealized gain (loss) on foreign exchange	(147)	(292)	(145)
Change in fair value of convertible notes	(1,615)	—	1,615
Change in fair value of Series A preferred share tranche obligation	180	(1,130)	(1,310)
Other expense	(39)	(6)	33
Total other expense, net	(1,621)	(1,428)	193
Loss before income taxes	(7,796)	(14,248)	(6,452)
Income tax expense	—	(35)	(35)
Net and comprehensive loss	<u><u>\$ (7,796)</u></u>	<u><u>\$ (14,283)</u></u>	<u><u>\$ (6,487)</u></u>

Research and Development Expenses, Net of Tax Credits

Research and development expenses were \$9.9 million for the year ended December 31, 2018, compared to \$4.4 million for the year ended December 31, 2017. The \$5.5 million increase was primarily due to a:

- \$1.7 million increase in direct external costs for both discovery and development activities as a result of our increased efforts towards identifying a product candidate;
- \$2.0 million increase in personnel related expenses in support of our increased discovery and development activities;
- \$1.1 million increase in lab supplies and research materials as a result of our increased efforts towards identifying a product candidate; and

[Table of Contents](#)

- \$0.7 million net increase in other research and development net costs in support of our increased research and development activities.

General and Administrative Expenses

General and administrative expenses were \$2.9 million for the year ended December 31, 2018, compared to \$1.8 million for the year ended December 31, 2017. The increase of \$1.1 million is primarily attributed to a \$0.7 million increase in payroll and personnel related costs, a \$0.3 million increase in legal and professional fees and a \$0.1 million increase in other general and administrative expenses, all in support of operating activities.

Other Expense, Net

Other expense, net was \$1.4 million for the year ended December 31, 2018, compared to \$1.6 million for the year ended December 31, 2017. The decrease of \$0.2 million is primarily attributable to a decrease of \$1.6 million in changes in the fair value of our convertible notes as a result of their conversion into Series A preferred shares in 2017, partially offset by an increase of \$1.3 million in changes in the fair value of our Series A preferred share tranche obligation and a \$0.1 million increase in realized and unrealized losses on foreign exchange as a result of fluctuations in foreign exchange rates.

Income Tax Expense

Income tax expense was \$0.03 million for the year ended December 31, 2018, reflecting taxable income in our U.S. subsidiary. No comparable income tax expense was incurred for the year ended December 31, 2017.

Net Loss

We had net losses of \$7.8 million and \$14.3 million for the years ended December 31, 2017 and 2018, respectively.

Liquidity and Capital Resources

Sources of Liquidity

Since our inception, we have not recognized any revenue and have incurred operating losses and negative cash flows from our operations. We have not yet commercialized any product and we do not expect to generate revenue from sales of any products for several years, if at all. Since our inception, we have funded our operations primarily through equity financings, and have raised an aggregate of approximately \$135.2 million of gross proceeds from the sale of our preferred shares. We have also partnered with Ono for our Polq inhibitor program and received initial upfront payments of approximately \$8.1 million. As of March 31, 2020, we had \$83.7 million of cash on hand.

Funding Requirements

As of March 31, 2020, our cash on hand was \$83.7 million. We believe that the net proceeds from this offering, together with our existing cash on hand and the \$65.0 million payment Bristol Myers Squibb paid us in connection with our entry into the collaboration and license agreement in May 2020, will enable us to fund our operating expenses and capital expenditure requirements at least through 2022. We have based this estimate on assumptions that may prove to be wrong, and we could expend our capital resources sooner than we expect.

We expect to incur significant expenses and operating losses for the foreseeable future as we advance our product candidates through preclinical and clinical development, seek regulatory approval and pursue commercialization of any approved product candidates. We expect that our research and development and

[Table of Contents](#)

general and administrative costs will increase in connection with our planned research and development activities. In addition, upon the completion of this offering, we expect to incur additional costs associated with operating as a public company.

We believe that our existing cash on hand will be sufficient to fund our anticipated operating and capital expenditure requirements for at least the next 12 months from the date of this prospectus. We have based this estimate on assumptions that may prove to be wrong, and we could exhaust our capital resources sooner than we expect. If we receive regulatory approval for any of our product candidates, we expect to incur significant commercialization expenses related to product manufacturing, sales, marketing and distribution, depending on where we choose to commercialize. We may also require additional capital to pursue in-licenses or acquisitions of other product candidates.

Because of the numerous risks and uncertainties associated with research, development and commercialization of our product candidates, we are unable to estimate the exact amount of our working capital requirements. Our future capital requirements will depend on many factors, including:

- the initiation, timing, costs, progress and results of our planned clinical trials of RP-3500;
- the progress of preclinical development and possible clinical trials of our current earlier-stage programs;
- the scope, progress, results and costs of our research programs and preclinical development of any additional product candidates that we may pursue;
- the development requirements of other product candidates that we may pursue;
- our headcount growth and associated costs as we expand our research and development and establish a commercial infrastructure;
- the timing and amount of milestone and royalty payments that we are required to make or eligible to receive under our current or future collaboration agreements;
- the outcome, timing and cost of meeting regulatory requirements established by the FDA, EMA and other regulatory authorities;
- the costs and timing of future commercialization activities, including product manufacturing, marketing, sales and distribution, for any of our product candidates for which we receive marketing approval;
- the cost of expanding, maintaining and enforcing our intellectual property portfolio, including filing, prosecuting, defending and enforcing our patent claims and other intellectual property rights;
- the cost of defending potential intellectual property disputes, including patent infringement actions brought by third parties against us or any of our product candidates;
- the effect of competing technological and market developments;
- the cost and timing of completion of commercial-scale manufacturing activities;
- the extent to which we partner our programs, acquire or in-license other product candidates and technologies or enter into additional strategic collaborations;
- the revenue, if any, received from commercial sales of RP-3500 and any future product candidates for which we receive marketing approval; and
- the costs of operating as a public company.

Until such time, if ever, as we can generate substantial product revenues to support our cost structure, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations and

[Table of Contents](#)

other similar arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interest of our shareholders will be or could be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our common shareholders. Debt financing and equity financing, if available, 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 funds through collaborations, or other similar arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or grant licenses on terms that may not be favorable to us and/or may reduce the value of our common shares. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market our product candidates even if we would otherwise prefer to develop and market such product candidates ourselves.

Cash Flows

Comparison of the Three Months Ended March 31, 2019 and 2020

The following table summarizes our cash flows for each of the periods presented:

	THREE MONTHS ENDED MARCH 31,		Change
	2019	2020	
	(in thousands)		
Net cash provided by (used in) operating activities	\$ 2,850	\$ (9,717)	\$ (12,567)
Net cash used in investing activities	(80)	(30)	50
Net cash provided by financing activities	20,995	222	(20,773)
Effect of exchange rate fluctuations on cash held	(44)	(1,577)	(1,533)
Net increase (decrease) in cash and restricted cash	<u>\$23,721</u>	<u>\$ (11,102)</u>	<u>\$ (34,823)</u>

Operating Activities

Net cash provided by operating activities was \$2.9 million for the three months ended March 31, 2019, reflecting a net loss of \$4.8 million, offset by a net change of \$7.4 million in our net operating assets and non-cash charges of \$0.3 million. The non-cash charges primarily consist of depreciation expense, share-based compensation expense for option grants to employees, changes in the fair value of the Series A preferred share tranche obligation, non-cash lease expense, as well as foreign exchange gains and losses. The change in our net operating assets and liabilities was primarily due to an increase of \$8.1 million in deferred revenue from the upfront payments received from Ono pursuant to the terms of our collaboration and a decrease of \$0.1 million in prepaid expenses, partially offset by a net increase of \$0.4 million for research and development tax credits receivable and other receivables, as well as a decrease of \$0.4 million in accrued expenses and other current liabilities.

Net cash used in operating activities was \$9.7 million for the three months ended March 31, 2020, reflecting a net loss of \$12.6 million, offset by a net change of \$0.5 million in our net operating assets and non-cash charges of \$2.4 million. The non-cash charges primarily consist of unrealized foreign exchange losses, as well as depreciation expense, share-based compensation expense for option grants to employees and non-cash lease expense. The change in our net operating assets and liabilities was primarily due to an increase of \$1.4 million in other assets, other receivables, research and development tax credits receivable and prepaid expenses, as well as a decrease of \$0.1 million in operating lease liabilities, offset by an increase of \$2.0 million in accounts payable, accrued expenses and other current liabilities, as well as income tax payable.

The \$12.6 million increase in cash used in operating activities for the three months ended March 31, 2020 compared to March 31, 2019 is primarily due to a decrease in cash provided by the \$8.1 million in upfront

[Table of Contents](#)

payments received from Ono under the terms of our collaboration agreement for our Polq inhibitor program in the first quarter of 2019, as well as an increase in research and development expenses and general and administrative expenses as a result of our increased efforts towards identifying product candidates and advancing the development of RP-3500.

Investing Activities

Net cash used in investing activities was \$0.1 million and \$0.03 million for the three months ended March 31, 2019 and 2020, respectively, and resulted from the purchases of property and equipment.

Financing Activities

Net cash provided by financing activities was \$21.0 million for the three months ended March 31, 2019, consisting of net proceeds from the issuance of Series A preferred shares in January 2019. Net cash provided by financing activities was \$0.2 million for the three months ended March 31, 2020, consisting of net proceeds from the exercise of stock options, partially offset by payments of deferred financing costs.

Effect of exchange rate fluctuations on cash held

The effect of exchange rate fluctuations on cash held was \$0.04 million and \$1.6 million for the three months ended March 31, 2019 and 2020, respectively, and resulted from fluctuations in foreign exchange rates, as well as higher foreign currency-denominated cash balances held in the first quarter of 2020 compared to the first quarter of 2019. From December 31, 2019 to March 31, 2020, the relative value of the U.S. dollar to the Canadian dollar increased by approximately 8%.

Comparison of the Years Ended December 31, 2018 and 2019

The following table summarizes our cash flows for each of the years presented:

	YEAR ENDED DECEMBER 31,		Change
	2018	2019	
	(in thousands)		
Net cash used in operating activities	\$(12,618)	\$(18,429)	\$ (5,811)
Net cash used in investing activities	(583)	(1,304)	(721)
Net cash provided by financing activities	—	103,243	103,243
Effect of exchange rate fluctuations on cash held	(259)	566	825
Net (decrease) increase in cash and restricted cash	<u>\$(13,460)</u>	<u>\$ 84,076</u>	<u>\$ 97,536</u>

Operating Activities

Net cash used in operating activities was \$12.6 million for the year ended December 31, 2018, reflecting a net loss of \$14.3 million, a net change of \$0.4 million in our net operating assets and non-cash charges of \$2.1 million. The non-cash charges primarily consist of changes in the fair value of the Series A preferred share tranche obligation, depreciation expense, share-based compensation expense for option grants to employees as well as foreign exchange gains and losses. The change in our net operating assets and liabilities was primarily due to an increase of \$0.5 million for research and development tax credits receivable, other receivables and prepaid expenses, partially offset by a net increase of \$0.1 million in accrued expenses and other current liabilities.

Net cash used in operating activities was \$18.4 million for the year ended December 31, 2019, reflecting a net loss of \$27.2 million, offset by a net change of \$6.6 million in our net operating assets and non-cash charges

[Table of Contents](#)

of \$2.2 million. The non-cash charges primarily consist of changes in the fair value of the Series A preferred share tranche obligation, depreciation expense, share-based compensation expense for option grants to employees, non-cash lease expense as well as foreign exchange gains and losses. The change in our net operating assets and liabilities was primarily due to an increase of \$8.1 million in deferred revenue from the upfront payments received from Ono pursuant to the terms of our collaboration, an increase of \$1.7 million in accounts payable, accrued expenses and other current liabilities, partially offset by a decrease of \$0.4 million in operating lease liabilities and an increase of \$2.8 million for prepaid expenses, research and development tax credits receivable, other receivables and other non-current assets.

The \$5.8 million increase in cash used in operating activities for the year ended December 31, 2019 compared to December 31, 2018 is primarily due to an increase in research and development expenses and general and administrative expenses as a result of our increased efforts towards identifying product candidates and advancing the development of RP-3500, partially offset by the \$8.1 million in upfront payments received from Ono under the terms of our collaboration for our Polq inhibitor program.

Investing Activities

Net cash used in investing activities was \$0.6 million and \$1.3 million for the years ended December 31, 2018 and 2019, respectively, and resulted from the purchases of property and equipment.

Financing Activities

Net cash provided by financing activities was \$103.2 million for the year ended December 31, 2019, consisting of net proceeds from the issuance of Series A preferred shares in January 2019 and net proceeds from the issuance of Series B preferred shares in September 2019. We had no cash provided by financing activities in 2018.

Comparison of the Years Ended December 31, 2017 and 2018

The following table summarizes our cash flows for each of the years presented:

	YEAR ENDED DECEMBER 31,		Change
	2017	2018	
	(in thousands)		
Net cash used in operating activities	\$ (6,007)	\$ (12,618)	\$ (6,611)
Net cash used in investing activities	(1,156)	(583)	573
Net cash provided by financing activities	30,458	—	(30,458)
Effect of exchange rate fluctuations on cash held	7	(259)	(266)
Net increase (decrease) in cash and restricted cash	<u>\$23,302</u>	<u>\$ (13,460)</u>	<u>\$ (36,762)</u>

Operating Activities

Net cash used in operating activities was \$6.0 million for the year ended December 31, 2017, reflecting a net loss of \$7.8 million, a net change of \$0.2 million in our net operating assets and non-cash charges of \$1.6 million. The non-cash charges primarily consist of changes in the fair value of the convertible notes and Series A preferred share tranche obligation, depreciation expense and share-based compensation expense for option grants to employees. The change in our net operating assets and liabilities was primarily attributable to an increase of \$1.1 million in accounts payables, accrued expenses and other current liabilities, as well as other liabilities, partially offset by an increase of \$0.8 million in prepaid expenses, research and development tax credits receivable, other receivables and other non-current assets.

[Table of Contents](#)

Net cash used in operating activities was \$12.6 million for the year ended December 31, 2018, reflecting a net loss of \$14.3 million, a net change of \$0.4 million in our net operating assets and non-cash charges of \$2.1 million. The non-cash charges primarily consist of changes in the fair value of the Series A preferred share tranche obligation, depreciation expense, share-based compensation expense for option grants to employees as well as foreign exchange gains and losses. The change in our net operating assets and liabilities was primarily due to an increase of \$0.5 million for research and development tax credits receivable, other receivables and prepaid expenses, partially offset by a net increase of \$0.1 million in accrued expenses and other current liabilities.

The \$6.6 million increase in cash used in operating activities for the year ended December 31, 2018 compared to December 31, 2017 was primarily due to an increase in research and development expenses and general and administrative expenses as a result of our increased efforts towards advancing our research and development program.

Investing Activities

Net cash used in investing activities was \$1.2 million and \$0.6 million for the years ended December 31, 2017 and 2018, respectively, and resulted from the purchases of property and equipment.

Financing Activities

Net cash provided by financing activities was \$30.5 million for the year ended December 31, 2017, consisting of net proceeds from the issuance of convertible notes in April 2017 and the net proceeds from the issuance of Series A preferred shares in June 2017. We had no cash provided by financing activities in 2018.

Contractual Obligations and Commitments

The following table summarizes our commitments to settle contractual obligations at March 31, 2020 (in thousands), other than leases which are recognized as operating lease liabilities in our balance sheet:

	Payments Due By Period			
	Total	Less than 1 Year	1-3 Years	More than 5 Years
Collaboration and research agreements	\$ 11,125	\$ 3,525	\$ 5,250	\$ 2,350
Total	\$ 11,125	\$ 3,525	\$ 5,250	\$ 2,350

The commitment amounts in the table above are associated with contracts that are enforceable and legally binding and that specify all significant terms, including fixed or minimum services to be used, fixed, minimum or variable price provisions, and the approximate timing of the actions under the contracts.

Collaboration and Research Agreements

Collaboration and research agreement obligations primarily relate to a strategic collaboration agreement that we entered into with the University of Texas M. D. Anderson Cancer Center, or MDACC, in March 2020. The collaboration will consist of preclinical studies and clinical trials designed by us and MDACC with the research to be completed by MDACC. We have agreed to commit \$10.0 million in the aggregate to fund the collaboration, with payments to be made over a period of five years, of which \$2.0 million was paid in April 2020.

Collaboration and research agreement obligations also relate to the agreement we entered into with the Broad Institute Inc., or Broad, in February 2019, under which Broad will perform specialty screening services at our request over the course of a three-year term in exchange for payments of \$0.5 million per year, totaling \$1.5 million in the aggregate.

[Table of Contents](#)

Purchase and Other Obligations

In the normal course of business, we enter into contracts with CROs and other third parties for preclinical studies and clinical trials, research and development supplies and other testing and manufacturing services. These contracts generally do not contain minimum purchase commitments and provide for termination on notice, and therefore are cancellable contracts. These payments are not included in the table above as the amount and timing of such payments are not known as of March 31, 2020.

We have also entered into license agreements under which we are obligated to make milestone and royalty payments and incur annual maintenance fees. We have not included future milestone or royalty payments under these agreements in the table above since the payment obligations are contingent upon future events, such as achieving certain clinical and commercial milestones or generating product sales. As of March 31, 2020, we were unable to estimate the timing or likelihood of achieving these clinical and commercial milestones or generating future product sales. See the section titled “—License and Collaboration Agreements” elsewhere in this prospectus as well as Note 6 to our annual consolidated financial statements appearing elsewhere in this prospectus for a description of our license agreements.

Critical Accounting Policies and Significant Judgments and Estimates

This management’s discussion and analysis is based on our consolidated financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles. The preparation of these consolidated financial statements requires us to make judgments and estimates that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of expenses during the reported periods. We base our estimates on historical experience, known trends and events, and various other factors that we believe to be reasonable under the circumstances. Actual results may differ from these estimates under different assumptions or conditions. On an ongoing basis, we evaluate our judgments and estimates in light of changes in circumstances, facts, and experience. The effects of material revisions in estimates, if any, will be reflected in the consolidated financial statements prospectively from the date of change in estimates.

While our accounting policies are described in more detail in the notes to our consolidated financial statements appearing elsewhere in this prospectus, we believe the following accounting policies used in the preparation of our consolidated financial statements require the most significant judgments and estimates. See Note 2 to our annual consolidated financial statements included elsewhere in this prospectus for a description of our other significant accounting policies.

Accrued Research and Development Expenses

As part of the process of preparing our consolidated financial statements, we are required to estimate our accrued research and development expenses as of each balance sheet date. This process involves reviewing open contracts and purchase orders, communicating with our personnel to identify services that have been performed on our behalf, and estimating the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of the actual cost. The majority of our service providers invoice us monthly in arrears for services performed or when contractual milestones are met. We make estimates of our accrued expenses as of each balance sheet date based on facts and circumstances known to us at that time. We periodically confirm the accuracy of our estimates with the service providers and make adjustments if necessary.

We base our expenses related to research and development activities on our estimates of the services received and efforts expended pursuant to quotes and contracts with vendors that conduct research and development on our behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. There may be instances in which payments made to our

[Table of Contents](#)

vendors will exceed the level of services provided and result in a prepayment of the research and development expense. In accruing service fees, we estimate the time period over which services will be performed and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from our estimate, we adjust the accrual or prepaid balance accordingly. Non-refundable advance payments for goods and services that will be used in future research and development activities are expensed when the activity has been performed or when the goods have been received rather than when the payment is made.

Although we do not expect our estimates to be materially different from amounts incurred, if our estimates of the status and timing of services performed differ from the actual status and timing of services performed, it could result in us reporting amounts that are too high or too low in any particular period.

Preferred Share Tranche Obligation

The initial fair value of the preferred share tranche obligation recognized in connection with our issuance of Series A preferred shares in June 2017 was determined based on significant inputs not observable in the market, which represents a Level 3 measurement within the fair value hierarchy, which are detailed in Note 3 to our annual consolidated financial statements included elsewhere in this prospectus. The initial fair value of the obligation was estimated based on results of a third-party valuation. This obligation is remeasured prior to the issuance of subsequent tranches and at each subsequent reporting period. See Note 8 to our annual consolidated financial statements included elsewhere in this prospectus for additional information regarding our issuances of preferred shares.

Each tranche obligation is valued as a forward contract. The values are determined using a probability-weighted present value calculation. In determining the fair values of the tranche obligations, estimates and assumptions impacting fair value included the future value of our Series A preferred shares, discount rates, estimated years to liquidity, and probability of each tranche closing. We determined the per share future value of the Series A preferred shares by back-solving to the initial proceeds of the Series A financing. We remeasured each tranche obligation at each reporting period and prior to settlement.

Share-Based Compensation

We measure share-based compensation based on the grant date fair value of the share-based awards and recognize share-based compensation expense on a straight-line basis over the requisite service period of the awards, which is generally the vesting period of the respective award. For non-employee awards, compensation expense is recognized as the services are provided, which is generally ratably over the vesting period. On January 1, 2017, we adopted, using the modified retroactive approach, the guidance of *Accounting Standard Update, or ASU, 2018-07, Compensation — Stock Compensation (Topic 718) — Improvements to Nonemployee Share-Based Payment Accounting*, and account for awards to non-employees using the grant date fair value without subsequent periodic remeasurement. The adoption of ASU 2018-07 did not have a material effect on our consolidated financial statements.

Share-based compensation expense is classified in our consolidated statements of operations and comprehensive loss based on the function to which the related services are provided. We recognize share-based compensation expense for the portion of awards that have vested. Forfeitures are accounted for as they occur.

The fair value of each option grant is estimated on the date of grant using the Black-Scholes option-pricing model, which requires inputs based on certain subjective assumptions, including the expected share price volatility, the expected term of the option, the risk-free interest rate for a period that approximates the expected term of the option, and our expected dividend yield. The fair value of each restricted common shares award is estimated on the date of grant based on the fair value of our common share on that same date. As there is currently no public market for our common shares, we determined the volatility for awards granted based on an

[Table of Contents](#)

analysis of reported data for a group of guideline companies that issued options with substantially similar terms. The expected volatility has been determined using a weighted-average of the historical volatility measures of this group of guideline companies. We expect to continue to do so until we have adequate historical data regarding the volatility of the trading price of our common shares on Nasdaq. The expected term of our options granted to employees has been determined utilizing the “simplified” method for awards that qualify as “plain-vanilla” options. With the adoption of ASU 2018-07, we applied the nonpublic entity practical expedient for calculating the expected term of non-employee awards, using the midpoint between the vesting date and the contractual term, which is consistent with the method used for employee awards. The risk-free interest rate is determined by reference to the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award. We have not paid, and do not anticipate paying, dividends on our common shares; therefore, the expected dividend yield is assumed to be zero.

As there has been no public market for our common shares to date, the historical estimated fair value of our common shares has been approved by our board of directors, considering our most recently available independent third-party valuations of common shares. In accordance with the guidance outlined in the American Institute of Certified Public Accountants’ Accounting and Valuation Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*, a third-party valuation firm prepared valuations of our common shares using either an option pricing method, or OPM, or a hybrid method, both of which used market approaches to estimate our enterprise value. The OPM treats common shares and preferred shares as call options on the total equity value of a company, with exercise prices based on the value thresholds at which the allocation among the various holders of a company’s securities changes. Under this method, the common shares have value only if the funds available for distribution to shareholders exceeded the value of the preferred share liquidation preferences at the time of the liquidity event, such as a strategic sale or a merger. A discount for lack of marketability of the common shares is then applied to arrive at an indication of value for the common shares. The hybrid method is a probability-weighted expected return method, or PWERM, where the equity value in one or more scenarios is calculated using an OPM. The PWERM is a scenario-based methodology that estimates the fair value of common shares based upon an analysis of future values for the company, assuming various outcomes. The common share value is based on the probability-weighted present value of expected future investment returns considering each of the possible outcomes available as well as the rights of each share class. The future value of the common share under each outcome is discounted back to the valuation date at an appropriate risk-adjusted discount rate and probability weighted to arrive at an indication of value for the common share.

In addition to considering the results of the third-party valuations, our board of directors considered various objective and subjective factors to determine the fair value of our common shares as of each grant date, which may be a date later than the most recent third-party valuation date, including:

- the prices at which we sold preferred shares and the superior rights and preferences of the preferred shares relative to our common shares at the time of each grant;
- the progress of our research and development efforts, including the status of preclinical studies for our product candidates;
- the lack of liquidity of our equity as a private company;
- our stage of development and business strategy and the material risks related to our business and industry;
- the achievement of enterprise milestones, including entering into collaboration and license agreements;
- the valuation of publicly traded companies in the life sciences and biotechnology sectors, as well as recently completed mergers and acquisitions of peer companies;
- any external market conditions affecting the biotechnology industry, and trends within the biotechnology industry;

Table of Contents

- the likelihood of achieving a liquidity event for the holders of our preferred shares and holders of our common shares, such as an initial public offering, or IPO, or a sale of our company, given prevailing market conditions; and
- the analysis of IPOs and the market performance of similar companies in the biopharmaceutical industry.

There are significant judgments and estimates inherent in these valuations. These judgments and estimates include assumptions regarding our future operating performance, the stage of development of our product candidates, the timing of a potential IPO or other liquidity event and the determination of the appropriate valuation methodology at each valuation date. The assumptions underlying these valuations represent management's best estimates, which involve inherent uncertainties and the application of management judgment. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, our share-based compensation expense could be materially different. Following the completion of this offering, the fair value of our common shares will be determined based on the quoted market price of our common shares.

The following table sets forth by grant date, the number of shares underlying options granted, the per share exercise price of options, the fair value of per common share on each grant date, and the per share estimated fair value of the options granted between January 1, 2017 and March 31, 2020. We did not grant any restricted common shares during this period.

<u>Grant Date</u>	<u>Number of Common Shares Subject to Options Granted</u>	<u>Exercise Price per Common Share (1)</u>	<u>Estimated Per-Share Fair Value of Options (2)</u>	<u>Estimated Fair Value per Common Share at Grant Date (3)</u>	<u>Type</u>
December 1, 2017	822,658	\$ 1.64	\$ 1.03	\$ 1.64	Options
November 30, 2018	55,426	\$ 1.64	\$ 1.40	\$ 1.58	Options
November 30, 2018	39,588	\$ 2.06	\$ 1.27	\$ 1.58	Options
March 29, 2019	1,013,635	\$ 2.06	\$ 0.97	\$ 1.64	Options
September 25, 2019	3,299	\$ 2.06	\$ 1.15	\$ 1.88	Options
September 25, 2019	63,508	\$ 1.88	\$ 1.21	\$ 1.88	Options
November 21, 2019	351,367	\$ 1.88	\$ 1.21	\$ 1.88	Options
December 16, 2019	1,318,503	\$ 2.42	\$ 1.58	\$ 2.42	Options
December 16, 2019	10,722	\$ 2.42	\$ 1.52	\$ 2.42	Options

- (1) The exercise price per common share represents the fair value of our common shares on the date of grant, as determined by our board of directors.
- (2) The estimated per share fair value of options reflects the weighted average fair value of options granted on each grant date, determined using the Black-Scholes option-pricing model.
- (3) At the time of the option grants above, our board of directors determined that the values included under "Exercise Price per Common Share" reasonably reflected the per share fair value of our common shares as of the grant dates. However, for certain dates, the fair value of the common shares at the date of these grants was adjusted to the amounts included under "Estimated Fair Value per Common Share at Grant Date" in connection with retrospective fair value assessments for financial reporting purposes.

Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined in the rules and regulations of the SEC.

Recently Adopted Accounting Pronouncements

See Note 2 to our annual consolidated financial statements financial statements appearing elsewhere in this prospectus for a description of recent accounting pronouncements applicable to our financial statements.

Qualitative and Quantitative Disclosures about Market Risk

We are exposed to certain market risks in the ordinary course of our business. Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. Our market risk exposure is primarily the result of fluctuations in foreign currency exchange rates.

Interest Rate Risk

Interest-earning instruments carry a degree of interest rate risk. We have not historically earned interest on our cash balances and we do not enter into investments for trading or speculative purposes.

Foreign Currency Exchange Risk

Our reporting and functional currency is the U.S. dollar. Assets and liabilities denominated in currencies other than the U.S. dollar are translated into U.S. dollars at exchange rates in effect at each balance sheet date. Income items and expenses are translated using the average exchange rate in effect for the relevant period.

We incur a portion of our expenses in Canadian dollars, as well as other currencies to a lesser extent. A change in the relative value of the U.S. dollar to the Canadian dollar and other currencies may negatively affect revenue and other operating results as expressed in U.S. dollars. We have not engaged in the hedging of foreign currency transactions to date, although we may choose to do so in the future. We do, however, keep expected Canadian dollar cash requirements in Canadian dollars to form a natural hedge. We are exposed to currency risk through our cash, research and development tax credits receivable, other receivables, restricted cash, accounts payable, accrued expenses and other current liabilities, and operating lease liabilities denominated in Canadian dollars. Based on our March 31, 2020 Canadian dollar net exposure, and assuming all other variables remain constant, a 10% depreciation in the relative value of the U.S. dollar to the Canadian dollar would result in an increase of approximately \$1.8 million on our net loss.

We are also exposed to currency risk through our collaboration agreement with Ono as future payments receivable under our collaboration agreement, if any, are denominated in Japanese yen.

JOBS Act

In April 2012, the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, was enacted. The JOBS Act provides that, among other things, an “emerging growth company” can take advantage of the extended transition period for complying with new or revised accounting standards. Thus, an emerging growth company can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to take advantage of the benefits of this extended transition period. Our financial statements may therefore not be comparable to those of companies that comply with such new or revised accounting standards. Until the date that we are no longer an “emerging growth company” or affirmatively and irrevocably opt out of the exemption provided by Section 7(a)(2)(B) of the Securities Act, upon issuance of a new or revised accounting standard that applies to our financial statements and that has a different date for public and private companies, we will disclose the date on which adoption is required for non-emerging growth companies and the date on which we will adopt the recently issued accounting standard.

In addition, we intend to rely on the other exemptions and reduced reporting requirements provided by the JOBS Act. Subject to certain conditions, as an emerging growth company, we are entitled to rely on certain of these exemptions, including without limitation, (i) providing an auditor’s attestation report on our system of internal controls over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act and (ii) complying with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor’s report providing additional information about the audit and the financial statements, known as the auditor discussion and analysis.

[Table of Contents](#)

We will remain an emerging growth company until the earlier to occur of (1) the last day of our fiscal year (a) following the fifth anniversary of the completion of this offering, (b) in which we have total annual gross revenues of at least \$1.0 billion or (c) in which we are deemed to be a “large accelerated filer” under the rules of the SEC, which means the market value of our common shares that is held by non-affiliates exceeds \$700 million as of the last day of the second quarter of our fiscal year, and (2) the date on which we have issued more than \$1.0 billion in non-convertible debt during the prior three-year period.

BUSINESS

Overview

We are a leading precision oncology company enabled by our proprietary synthetic lethality approach to the discovery and development of novel therapeutics. Synthetic lethality, or SL, represents a clinically validated approach to drug development. We use our proprietary, genome-wide, CRISPR-enabled SNIPRx platform to systematically discover and develop highly targeted cancer therapies focused on genomic instability, including DNA damage repair. SL arises when a deficiency in either of two genes is tolerated in cells, but simultaneous deficiencies in both genes cause cell death. Cancer cells that contain a mutation in one gene of a SL pair are susceptible to therapeutic intervention targeting the other gene pair. Using our SNIPRx platform, we are developing our pipeline of SL product candidates, including our lead product candidate, RP-3500, an oral small molecule inhibitor for the treatment of solid tumors with specific DNA damage repair-related genomic alterations. We anticipate filing an investigational new drug, or IND, application in the second quarter of 2020 and initiating an open-label Phase 1/2 clinical trial of RP-3500 in the third quarter of 2020.

We believe our powerful SL-based approach to the development of new precision oncology therapeutics has multiple potential benefits:

- **Ability to address previously untargetable tumor biology**, including, for example, loss-of-function mutations;
- **Enhanced benefit-risk profile**, by precisely targeting tumor cells with the defined mutation while sparing normal, non-cancerous cells;
- **Genetic stratification of patients**, potentially enabling higher response rates; and
- **Tumor-agnostic approach**, focusing on specific genetics and enabling the application to multiple tumor types.

A cornerstone of our company is our SNIPRx platform, which enables us to accurately identify SL gene pairs and the corresponding patients who are most likely to benefit from our therapies based on the genetic profile of their tumors. These differentiated patient selection insights have driven the development of our lead product candidate, RP-3500, which is designed as a selective inhibitor of the DNA repair protein ataxia telangiectasia and Rad3-related protein, or ATR, a kinase that is activated by DNA replication stress. Tumors containing alterations in genes encoding other DNA repair proteins, such as ataxia-telangiectasia mutated kinase, or ATM, are SL with ATR inhibition and were observed to be hypersensitive to RP-3500 in our preclinical models. We believe that the preclinical selectivity and pharmacokinetic properties of RP-3500 support the profile of a differentiated therapy with the potential to enhance anti-tumor activity as compared to third party ATR inhibitors currently in development. Based on our preclinical studies, we believe RP-3500 has the potential to provide therapeutic benefit to identified patient populations both as a monotherapy and in combination with other therapies such as poly (ADP-ribose) polymerase, or PARP, inhibitors.

In addition to RP-3500, we are developing a portfolio of product candidates based on targets identified using our SNIPRx platform to treat cancers with a high unmet medical need. We have a preclinical program that is focused on a novel target we discovered to be SL with amplification of cyclin E1, or CCNE1, in tumors such as gynecological and upper gastrointestinal malignancies. We anticipate advancing a clinical candidate for this potential first-in-class program into IND-enabling studies in the fourth quarter of 2020. We are also developing an inhibitor of polymerase theta, or Polq, which is SL with multiple gene deficiencies found in tumors, including BRCA1 or BRCA2. We anticipate advancing a clinical candidate and initiating IND-enabling studies for this program in the second half of 2021.

The core of our SNIPRx platform is the ability to identify both known and novel SL targets. Our SNIPRx platform begins with a genome-wide CRISPR-based screening approach that utilizes our proprietary isogenic cell

[Table of Contents](#)

lines, which are cell lines that are identical with the exception of a single genomic alteration, to identify SL gene pairs. Our systematic and comprehensive screening approach has been optimized to significantly reduce false negatives, providing the opportunity to identify a larger and more accurate set of SL interactions as compared to what others have reported with CRISPR-based screening technologies.

We have systematically analyzed genomic data from approximately 60,000 tumor samples and identified an initial set of 16 clinically relevant tumor genomic alterations, which we refer to as tumor lesions, that are linked to genomic instability. These 16 tumor lesions are present in approximately 30% of tumors. For each of these 16 tumor lesions, we have completed a SNIPRx screen campaign to identify both previously reported and unreported targets that are SL with the tumor lesion of the campaign. The majority of our SNIPRx screen campaigns have identified multiple potential targets, which allows us to prioritize and select targets based on their potential to be amenable to small molecule inhibitors with drug-like properties. Once a SL product candidate is identified, we perform our proprietary SNIPRx Targeted Expansion of Patient Populations, or STEP², screens to identify additional genomic alterations that are SL to our product candidate. Using these screens, we are able to enrich the patient population in our clinical trials and expand the patient populations that may be addressable with our product candidates.

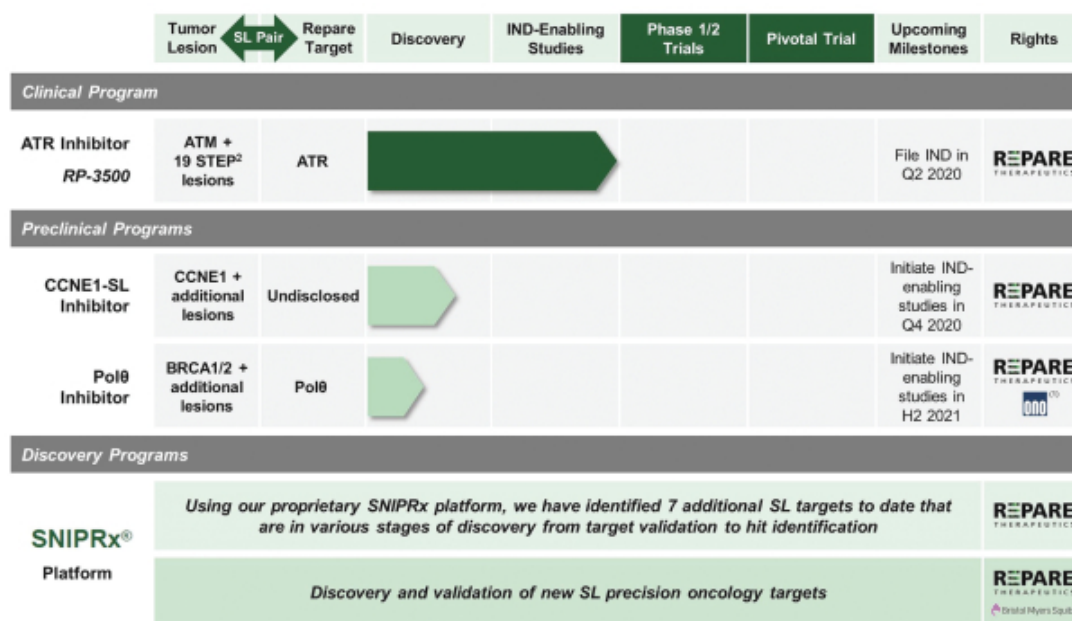
We are a leader in developing innovative SL therapies and have built our SNIPRx platform based on three primary pillars:

1. **Identify** novel SL targets using our proprietary, genome-wide, CRISPR-enabled screening technology against clinically relevant genomic alterations in tumors with high unmet medical need;
2. **Design and synthesize** potent and selective small molecule inhibitors of these targets; and
3. **Expand** beyond the initial target population based on the additional genomic alterations identified by our proprietary STEP² screens that are SL with our inhibitors.

In May 2020, we entered into a collaboration and license agreement with Bristol-Myers Squibb Company, or Bristol Myers Squibb, pursuant to which we and Bristol Myers Squibb have agreed to collaborate in the research and development of potential new product candidates for the treatment of cancer. We are providing Bristol Myers Squibb access to a selected number of our existing early SNIPRx screening campaigns and novel campaigns. The collaboration consists of programs directed to both druggable targets and to targets commonly considered undruggable by traditional small molecule approaches. As part of the agreement, Bristol Myers Squibb paid us an initial upfront fee payment of \$50.0 million and made an equity investment of \$15.0 million into our company. We will also be eligible to receive up to \$3.0 billion in total milestones across all potential programs. Such milestones consist of \$301 million in total milestones per program subject upon the achievement of certain specified research, development, regulatory and commercial milestones. See “—Collaborations and License Agreements—Collaboration and License Agreement with Bristol-Myers Squibb Company” for additional information.

Our Pipeline

We are leveraging our proprietary SNIPRx platform to discover, validate and build a robust pipeline of SL-based therapeutics. Our current pipeline is represented in the diagram below.



- (1) Ono Pharmaceutical has development and commercialization rights in Japan, South Korea, Taiwan, Hong Kong, Macau and certain other Southeast Asian countries. We retained all other rights outside of those countries. See “Business—Research Services, License and Collaboration Agreement with Ono Pharmaceutical Co.” for additional information.

Our Corporate History and Team

Our company was founded in 2016 by field-leading academics and Versant Ventures to systematically employ SL insights and platforms and develop new precision oncology medicines. Our co-founder, Daniel Durocher, Ph.D., a principal investigator at the Lunenfeld-Tanenbaum Research Institute, was an early pioneer of genome-wide, SL screening using CRISPR, which formed the framework for our SNIPRx platform. Our other co-founders, Agnel Sfeir, Ph.D. at NYU-Langone Medical Center and Frank Sicheri, Ph.D. at the Lunenfeld-Tanenbaum Research Institute, also played a key role in the development of our company.

We have assembled a highly qualified management team with broad experience in drug discovery and development to execute on our mission to develop novel precision oncology therapies based on SL. Our scientific co-founders and members of our management team collectively have extensive experience in oncology drug discovery and development and are pioneers in the SL field. Our management team includes industry veterans with prior experience at companies such as Pfizer, AstraZeneca, Merck, Bicycle Therapeutics and Clementia Pharmaceuticals. We have an experienced research and development team focused on leveraging our deep expertise and differentiated know-how across genomic target identification, target prioritization and selection, drug discovery chemistry and clinical development to develop highly potent and selective small molecule inhibitors based on SL for the treatment of cancer. Since our inception, we have raised an aggregate of approximately \$135.2 million of gross proceeds from the sale of our preferred shares. Our investors include Versant Ventures, MPM Capital, Cowen Healthcare Investments, OrbiMed, BVF Partners, Redmile Group, Logos Capital, Celgene/Bristol Myers Squibb, Fonds de Solidarité FTQ, and Amplitude Ventures.

Our Strategy

Our goal is to be the leading biopharmaceutical company developing precision oncology, small molecule therapies based on SL. The key elements of our strategy are to:

- **Advance our lead product candidate, RP-3500, through clinical development by leveraging our differentiated STEP² patient selection approach.** We designed RP-3500 to have a highly selective and potent profile that may enable it to be a leading inhibitor of ATR, if approved. We intend to initiate an open-label Phase 1/2 clinical trial of RP-3500 in the third quarter of 2020 in patients with advanced tumors that have alterations in the ATM gene or any of the 19 genes identified through our STEP² screens. We believe this clinical trial design element will enrich the patient population in our trials with those who are most likely to respond to RP-3500. In parallel with the monotherapy dose-escalation portion of the trial, we intend to initiate a combination therapy arm to evaluate the safety and efficacy of RP-3500 in combination with an approved PARP inhibitor in the same patient subgroups. We expect preliminary safety and efficacy data for the monotherapy and combination therapy dose escalation phase of the trial in the second half of 2021, which may inform the design, including the targeted patient population, of a future pivotal trial.
- **Continue to advance our preclinical programs into clinical development.** In addition to RP-3500, we have two programs in advanced preclinical development. One of these programs is focused on a novel target we discovered using our SNIPRx platform to be SL with CCNE1 amplification in tumors such as gynecological and upper gastrointestinal malignancies. We anticipate advancing a clinical candidate for this potential first-in-class program into IND-enabling studies in the fourth quarter of 2020. We are also developing an inhibitor of Polq, which is SL with multiple gene deficiencies found in tumors, including BRCA1 or BRCA2. We anticipate advancing a clinical candidate and initiating IND-enabling studies for this program in the second half of 2021.
- **Extend our leading position in SL drug discovery.** We have systematically analyzed genomic data from approximately 60,000 tumor samples and have identified an initial set of 16 tumor lesions that are linked to genomic instability. This initial set of tumor lesions provides us with the opportunity to be among the first to mine this substantial, largely non-overlapping genomic space for new SL gene pairs and develop a robust portfolio of novel targeted therapeutics. We intend to continue leveraging our leading position in the identification of novel oncology SL gene pairs and systematically applying our STEP² screens to expand the addressable patient populations for each of our product candidates. We believe our approach will allow us to continue to build a sustainable and long-term pipeline of novel product candidates for the targeted treatment of cancers with high unmet medical need.
- **Opportunistically pursue strategic partnerships to maximize the full potential of our pipeline and SNIPRx platform.** The large number of pre-existing mutations affecting genomic stability in tumors combined with the high throughput of our SNIPRx platform has the potential to provide us with an abundance of novel targets. We believe this provides the opportunity to selectively enter into strategic partnerships and leverage our partners' complementary capabilities. We intend to selectively evaluate partnerships to maximize the long-term value of our research and development portfolio. We believe our recent collaboration with Bristol Myers Squibb highlights the potential broad application of our platform in the search for the next generation of precision oncology medicines.

Background

Targeted Oncology Therapeutics

The first-generation of approved targeted therapies were predominately directed at driver mutations, which target specific types of receptor tyrosine kinases, such as, bcr-abl, EGFR and HER2. This initial class of precision therapies generated approximately \$20.0 billion of worldwide sales in 2019 and has largely represented the focus of the targeted oncology sector for the last 20 years. A rapid evolution in the understanding of tumor

biology coupled with an improved ability to segment subsets of tumors based on genomic alterations have led to the development of new generations of targeted cancer therapies for a variety of additional tumor-specific genomic abnormalities.

A new generation of targeted oncology therapeutics has recently emerged that transcends single tumor, organ or histology-targeted cancers. These new therapies are tumor agnostic and are instead targeted at specific genomic alterations that underlie more complex tumor cell vulnerabilities. This has led to the approval of therapies that address specific genomic features of tumors, such as nTRK kinase inhibitors, including larotrectinib, for the treatment of tumors with nTRK gene fusions, and PD1 inhibitors, including pembrolizumab, for the treatment of tumors with microsatellite instability. This emerging trend for tumor-agnostic indications represents a breakthrough in drug development, clinical trial designs, drug approval patterns and speed to market. This new generation of targeted therapies requires diagnostic tools for patient selection but offers substantial benefit to patients across many tumor types.

The speed at which science has uncovered genetic changes associated with tumors has outpaced the discovery and development of precision medicines that can target those alterations. Oncology drug development has been primarily focused on genes with readily druggable alterations that confer new or enhanced protein activity, known as gain-of-function targets, such as EGFR, which represent only 29% of targets in oncology. The remaining 71% of targets have historically been considered undruggable. These include both gain-of-function alterations (approximately 17%), such as CCNE1, as well as loss-of-function alterations (approximately 54%), such as BRCA1. In June 2019, the New England Journal of Medicine referred to SL as a particularly attractive means to target the complex and gene-network oriented relationships associated with this previously undiscovered domain of oncology targets.

The more recent ability to identify a tumor's genetic vulnerabilities and networks of genes responsible for more complex gene functions underlying many cancers has been enabled through new and disruptive technical breakthroughs in the field including:

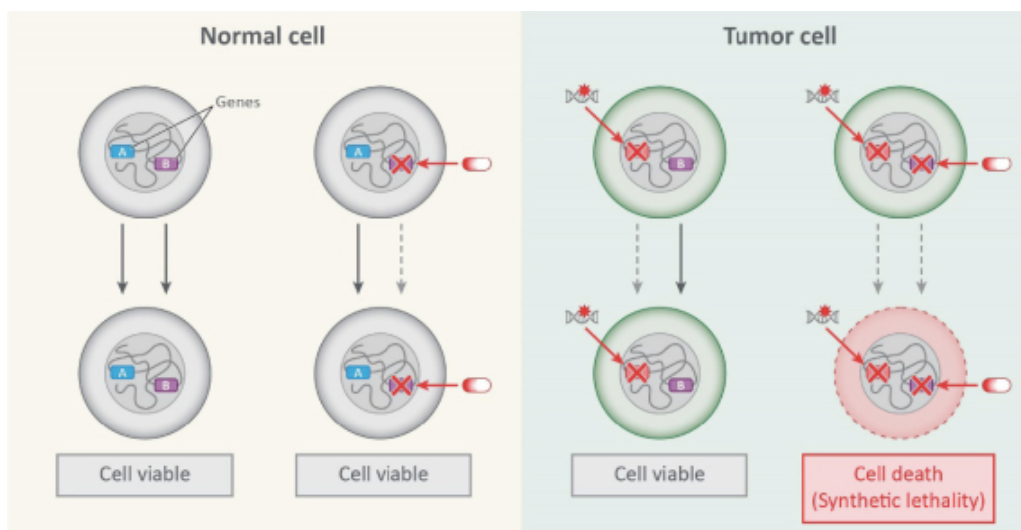
- **Clinically-relevant tumor genomic data:** the increasing adoption and regulatory acceptance of molecular tumor testing, enabling the accurate profiling of patient tumors;
- **Consolidated and annotated databases:** the availability of multiple new and publicly accessible databases that consolidate, analyze and synthesize new genetic data on tens of thousands of tumors; and
- **Tools to apply emerging genetic knowledge:** the emergence of new tools and methodologies, including CRISPR/Cas9, enabling large-scale studies of genetic networks underlying cancer biology.

The Synthetic Lethality Opportunity and Challenge

Synthetic lethality is a powerful approach and opportunity in oncology drug development that combines two key principles in treating patients with cancer through precision oncology: (1) identifying and selecting patient subgroups with specific genomic alterations in tumors that are most likely to benefit from these therapies and (2) improving tolerability and reducing toxicity by not affecting normal, non-cancerous cells.

SL arises when deficiencies in a pair of genes occur simultaneously to result in cell death, but if that deficiency exists in only one gene, the cell will survive. As depicted below, cancer cells that contain an alteration in one gene of a SL pair are susceptible to therapeutic intervention targeting the other gene pair, resulting in cell death, whereas normal cells are not affected by the inhibition of the targeted gene and remain viable.

Illustration of Synthetic Lethality Approach



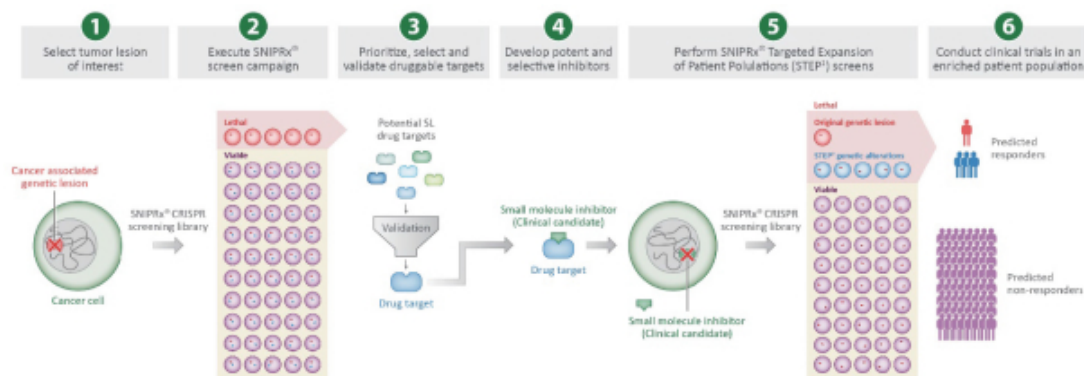
The first clinically-validated SL gene pair was PARP-BRCA1/2, and based on the efficacy of PARP inhibitors, the SL approach to treating cancer has achieved substantial commercial validation. PARP enzymes regulate critical DNA repair pathways that cancer cells rely on as they grow and divide. PARP inhibition blocks these pathways, preventing DNA repair in cancer cells with a BRCA1/2 alteration and resulting in cancer cell death while sparing normal cells. Multiple PARP inhibitors, including olaparib (AstraZeneca), niraparib (GlaxoSmithKline), talazoparib (Pfizer) and rucaparib (Clovis), have been approved for the treatment of tumors with BRCA and other DNA damage repair alterations, including ovarian, breast and pancreatic cancers. These four drugs generated over \$1.6 billion in worldwide sales in 2019 and are expected to reach over \$6.1 billion in worldwide sales by 2024.

While SL offers a new route to uncover important gene targets for the treatment of cancers, identifying these SL gene pairs has been a challenge due to the lack of systematic, prospective and large-scale methods to capture and exploit these gene-gene relationships for new drug discovery and development.

Our Approach: An Overview of Our Drug Discovery and Development Platform

Our SNIPRx platform integrates our deep expertise and differentiated know-how across genomic target identification, target prioritization and selection, drug discovery chemistry and clinical development. Our approach can be divided into six steps, as depicted in the graphic below.

Our Integrated Approach to Drug Discovery and Development



1. Select tumor lesion of interest.

Apply our deep understanding of tumor lesions with a bias for alterations associated with genomic instability and cancers with high unmet medical need.

Since 2016, we have systematically analyzed genomic data from approximately 60,000 tumor samples. We consult with leading oncology clinicians and key advisors to identify cancer types and subtypes where the current standard of care is not adequately improving patient survival. We then prioritize genetic lesions based on various criteria including mutation frequency and the feasibility of identifying lesion-positive patients. Of those, we focus on lesions that are known to directly or indirectly impact processes involved in genomic instability, such as DNA repair and cell cycle regulation.

We have identified an initial set of 16 largely mutually exclusive tumor lesions that comprise approximately 30% of tumors. These lesions are all linked to genomic instability.

2. Execute SNIPRx screen campaign.

Utilize our SNIPRx screening technology to identify target gene candidates that induce SL in the context of our initial set of 16 tumor lesions.

For each of the initial 16 tumor lesions we identified, each of which we refer to as an original tumor lesion, we have completed a screen campaign utilizing CRISPR technology and other tools to create proprietary isogenic cell lines, which are pairs of cell lines that are identical with the exception of a single genomic alteration. This allows us to identify, on a genome-wide basis, both known and novel targets that are SL with each original tumor lesion. Our SNIPRx platform has been optimized to both sensitivity and reproducibility, resulting in a significant decrease in false negatives compared to what has been reported with other CRISPR-based screening technologies.

3. Prioritize, select and validate druggable targets.

Evaluate the multiple SL targets identified for each original tumor lesion.

Our screen campaigns result in the identification of multiple SL targets for each original tumor lesion. We prioritize and select targets to advance into drug discovery based on a systematic and proprietary set of criteria,

which include thresholds for biological validation, cellular function, known and likely toxicity, druggability with small molecules, patentability and the potential for clinical impact versus alternative therapies. Our processes include extensive *in vitro*, genetic and *in vivo* animal validation of targets and comprehensive development of tool compounds for initial pharmacological corroboration.

4. Develop potent and selective inhibitors.

Develop small molecule product candidates that are highly potent and selective and advance them from lead discovery through the identification of a clinical candidate.

We have assembled an internal research team that has extensive experience in small molecule drug discovery with a proven track record of identifying development candidates and delivering them into and through the clinic. Our team has deep in-house capabilities in cell biology, molecular biology, biochemistry, enzymology, medicinal chemistry, computational chemistry and molecular modeling. We also have proven capabilities in drug metabolism, pharmacokinetic/pharmacodynamics, and absorption, distribution, metabolism and excretion evaluation, as well as pharmacology, including dedicated *in vivo* animal facilities to internally drive translational studies for human clinical trials. We believe these capabilities were demonstrated in the discovery and development of RP-3500.

5. Perform SNIPRx Targeted Expansion of Patient Populations (STEP²) screens.

Expand our potential patient populations beyond those identified by the original SL pair.

Once we have identified a clinical candidate, our STEP² screens utilize a set of cell lines that, when treated with our clinical candidate, elucidate genes that, when knocked down, cause (hyper) sensitivity to our selected inhibitor. These screens not only confirm the SL relationship with the original tumor lesion, but also identify additional genomic alterations that confer a response to our product candidates and are mutually exclusive from the original tumor lesion. We believe the identification of these new SL pairs allows us to rationally expand our targeted patient populations by enabling us to potentially treat patients with tumors across multiple genomic alterations with the same product candidate.

6. Conduct clinical trials in an enriched patient population.

Design our clinical trials for efficient clinical development.

For our clinical trials, we plan to enroll patients with tumors that contain either the original tumor lesion or any one of the genomic alterations identified by our STEP² screens. We believe this strategy will allow us to enroll only those patients who are most likely to achieve clinical benefit from our product candidates. In addition, we are prioritizing tumor types for which there are no effective therapies currently available. We plan to evaluate multiple cohorts of patients based on specific genomic alterations, which may enable us to pursue an accelerated regulatory approval pathway for certain targeted patient populations.

Our SNIPRx Platform

The core of our SNIPRx platform is the ability to identify both known and novel SL targets. We believe that our platform and approach provide many key advantages as highlighted below.

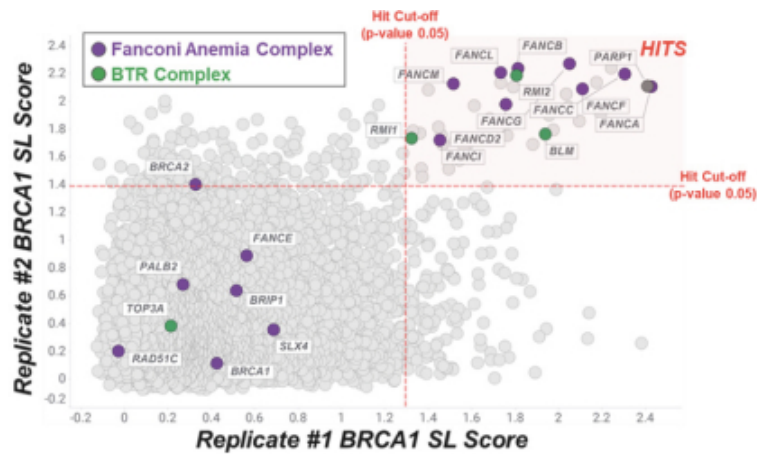
- **Designed to Address Previously Untargetable Tumor Biology.** Oncology drug development has been primarily focused on genes with readily druggable alterations that confer new or enhanced protein activity, known as gain-of-function targets, such as EGFR, which represent only 29% of targets in oncology. The remaining 71% of targets have historically been considered undruggable. These include both gain-of-function alterations (approximately 17%), such as CCNE1, as well as loss-of-function alterations (approximately 54%), such as BRCA1. Our SNIPRx platform has demonstrated an ability to identify novel SL relationships, including those that address previously untargetable tumor biology.

- **Applies Our Proprietary Genome-wide Library.** Genome-scale screens often identify many genes coding for the same protein complex or cellular pathway, thereby increasing confidence in those hits. These screens allow us to screen the entire genome to determine the top hits across all genes, as compared to the more limited druggable gene libraries. In addition, because the definition of what is druggable is continuously evolving, by using genome-scale screens, we are able to mine the results of our existing screens as new therapeutic modalities emerge. Our genome-wide libraries, together with our industrialized and optimized screening approach and technology, result in a significant reduction in false negative hits.
- **Utilizes Isogenic Cell Lines.** We believe a key differentiator of our SNIPRx platform is the utilization of thoroughly characterized, proprietary isogenic cell lines for our CRISPR-based genome-wide SL screen campaigns. We use normal, non-cancerous cell lines to engineer our isogenic cell models, which enable us to mine for SL interactions between two genes in models with clean genetic backgrounds that have minimal mutations and normal chromosome numbers. We have also developed a proprietary computational algorithm that is specifically designed to identify SL interactions from our isogenic screens. We believe using isogenic cell lines gives us a significant competitive advantage since most SL screening approaches used by others are based on cancer cell line panels, which we believe are less accurate due to their propensity to result in variable data.
- **Focuses on Niche of Genomic Instability.** Based on the well-established network of SL interactions in DNA synthesis and repair across model organisms, we have found and believe we will continue to find clear and reproducible SL interactions through our SNIPRx platform. Genomic instability is an early event that underlies all cancer, and many of the genes we screen represent early hits in cancer that may have less heterogeneity in later stage tumors. The genomic instability space is enriched with genes encoding enzymatic activity, which provides us with ample opportunity to identify novel druggable genes for development into small molecule precision oncology therapies. We believe developing product candidates that target genomic instability may lead to durable responses with resulting clinical benefits for patients.

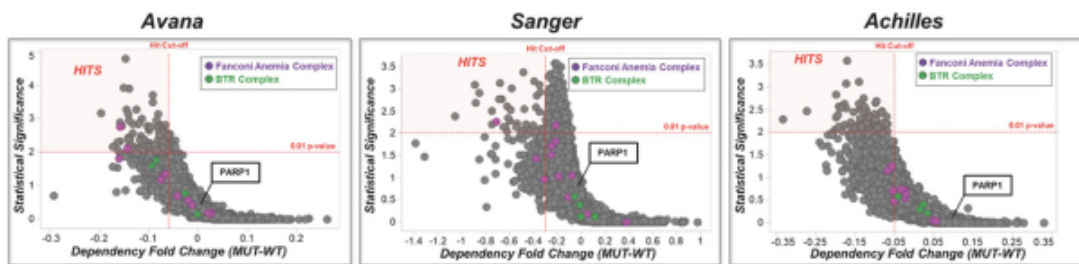
One example that illustrates the power of our SNIPRx platform is a SL screen campaign that we conducted in an isogenic pair of cell lines in which one cell line had a BRCA1 mutation and the other cell line was normal for BRCA1. The results of this screen campaign are graphically depicted below. The top-right quadrant of Graphic A highlights the SL hits resulting from our screen and shows that we were able to identify PARP1 as a SL hit with BRCA1. In addition, two additional sets of genes were identified to be SL with BRCA1: (1) the genes encoding the Fanconi Anemia pathway, which are depicted in purple, and (2) the genes coding for the BLM-RMI1-RMI2 complex, which are depicted in green. The independent identification by our SNIPRx screen campaign of multiple genes within a pathway or complex greatly increases confidence that those are true SL hits. In contrast, external cell panel screens that look for SL hits by comparing a panel of cancer cell lines that have either BRCA1-mutant or normal BRCA1 cell lines do not identify these validated BRCA1 SL genes. As shown in Graphic B below, multiple cancer cell line panel screens utilizing CRISPR or shRNA all failed to identify PARP1 as a SL hit with BRCA1.

SNIPRx Screen Campaign Identifies Both Known and Novel SL Pairs Undetected by Cancer Cell Line Panels

A. SNIPRx BRCA1 Isogenic SL Screen



B. External BRCA1 Cell Panel SL Screens



Our Clinical Program, RP-3500

Overview

Our lead product candidate, RP-3500, is a potent and selective oral small molecule inhibitor of ATR that we are developing for the treatment of tumors with mutations in ATM, which is a SL pair with ATR. ATR is a critical DNA damage response, or DDR, protein that acts as both the master regulator of the response to DNA replication stress, as well as a central effector of the DNA damage checkpoint. Based on the previously published SL relationship between ATR and ATM, ATR has been the target of prior drug discovery efforts, and ATR inhibitors in development have demonstrated promising, durable clinical responses in a small number of patients in early clinical trials. Through our STEP² screens, we believe that we have more precisely identified and expanded the patient populations that would benefit from RP-3500, which allows us to differentiate and enrich our clinical development strategy as well as address multiple types of solid tumors.

RP-3500 has demonstrated an optimized anti-tumor effect, selectivity and pharmacokinetics profile in preclinical studies that we believe supports the potential for it to be a leading ATR inhibitor, if approved. These data led to our decision to advance RP-3500 into IND-enabling studies. We also conducted multiple STEP² screens in which we confirmed the SL relationship between ATR and ATM and identified an additional 19 genes that are also SL with ATR, potentially expanding the patient populations that may benefit from our product

candidate. We anticipate filing an IND application in the second quarter of 2020 and initiating an open-label Phase 1/2 clinical trial of RP-3500 in the third quarter of 2020. We have designed our Phase 1/2 clinical trial to enroll patients based on the presence of alterations in ATM or any of the 19 STEP2-identified genes. Based on the observed synergistic activity in preclinical models with ATM and STEP2-identified genes, we also intend to include a combination arm in this trial to evaluate the anti-tumor activity of RP-3500 with an approved PARP inhibitor. We expect to report preliminary safety and efficacy data for the monotherapy and combination therapy dose escalation phase of the trial in the second half of 2021.

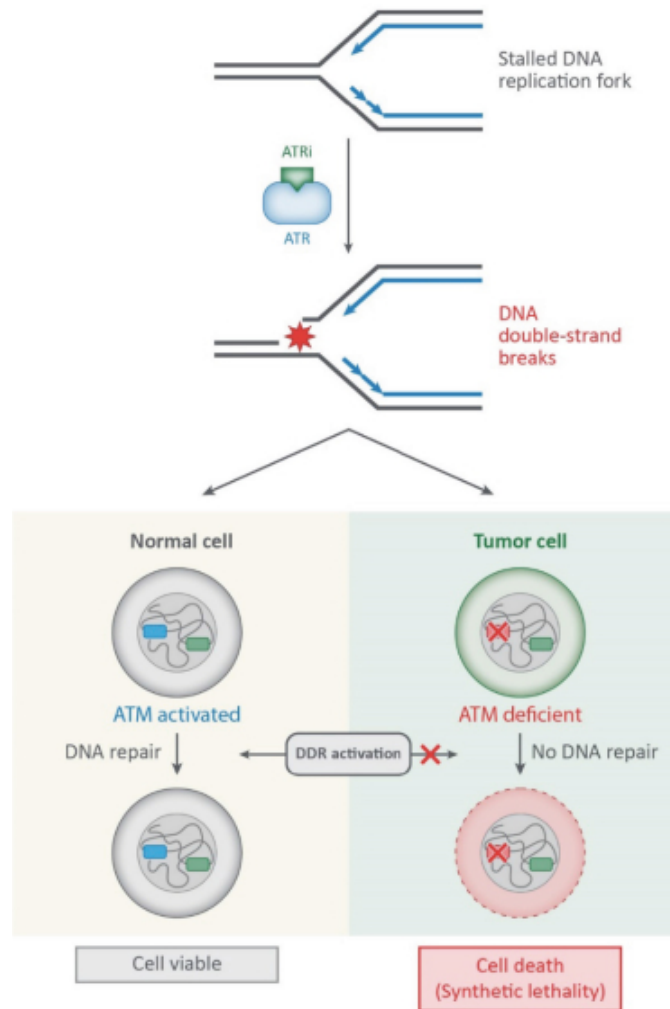
Mechanism of Action

ATR is a protein kinase that acts at multiple levels of the DDR network. It is activated when problems with ongoing DNA replication are identified, a phenomenon known as DNA replication stress. It uses its kinase activity to stabilize the DNA replication machinery locally and to suppress the initiation of DNA replication globally. As a consequence, ATR prevents the formation of DNA damage when DNA replication is stressed. In addition to these roles, ATR also restrains cell cycle progression when it is activated, a phenomenon known as the DNA damage checkpoint. ATR is one member of an extensive network of proteins that serve to recognize early stages of DNA damage, prevent replication from proceeding through these damaged sites and repair the damage. Cancer cells with alterations in genes encoding this network of DDR proteins are highly dependent on ATR for survival. ATR's central role in the regulation of replication stress has led to the development of multiple ATR inhibitors that have demonstrated durable responses in early clinical trials.

The ATM-ATR Synthetic Lethality

ATM is a DDR protein related to ATR that is responsible for sensing and signaling DNA double-strand breaks. Our ATM SNIPRx screen campaign confirmed that ATM-deficient cells rely on ATR activity for survival. ATM orchestrates the response to double-strand break repair and thus, ATM-deficient tumors have an impaired response to DNA breaks. Inhibition of ATR compromises the stabilization of DNA replication forks and is associated with increases in DNA double-strand breaks that would normally be detected and signaled for repair by ATM. SL screens conducted by us and others have identified that ATR is SL with ATM, making cancer cells that are deficient in ATM highly sensitive to killing by ATR inhibitors. An overview of the ATM-ATR SL relationship is illustrated below.

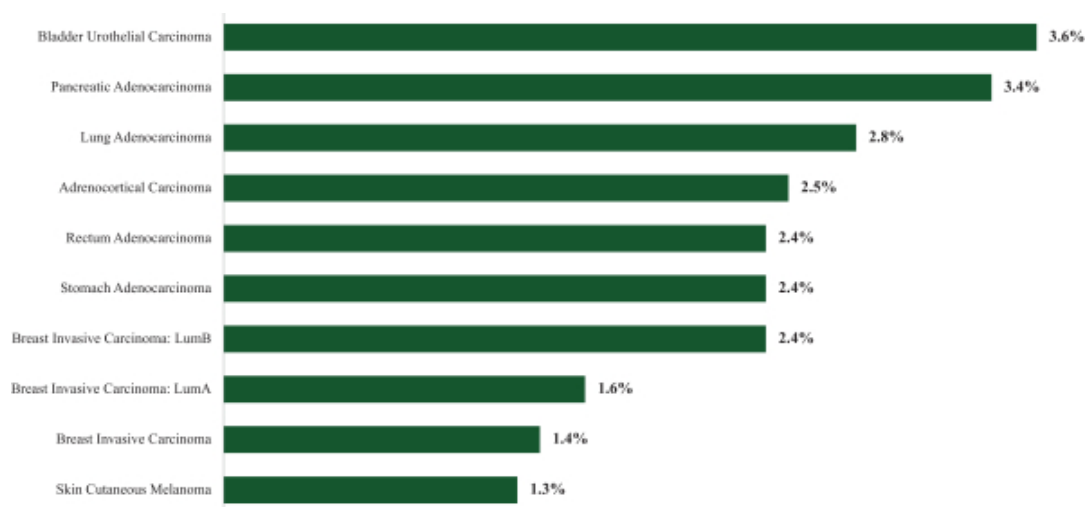
Mechanism of ATM-ATR Synthetic Lethality



[Table of Contents](#)

The gene encoding for ATM is frequently mutated in cancer. An analysis of sequence data collected as part of The Cancer Genome Atlas, or TCGA, found that between 1% and 4% of solid tumors, such as breast, bladder, pancreatic and lung cancers, have deficiencies in ATM, as depicted in the graph below.

Top 10 Tumor Types with Highest Prevalence of ATM Deficiency



Clinical Validation of ATR Inhibitors in ATM-Deficient Tumors

Three ATR inhibitors in development by third parties have been evaluated in clinical trials either as a monotherapy or in combination with DNA-damaging chemotherapy drugs, ionizing radiation, immune checkpoint blockers or PARP inhibitors, in advanced solid tumors and hematological malignancies. Data published to date from these trials support the preclinical observations of the SL of ATR inhibitors in ATM-deficient cancers. For example, in a clinical trial conducted by Merck Serono of its ATR inhibitor, a patient with colorectal cancer containing a mutation in ATM reported a complete response. Additional proof-of-concept for the clinical relevance of the SL link between ATR and ATM was reported in June 2019 with data from Bayer's Phase 1 clinical trial of its ATR inhibitor. This dose-escalation trial evaluated Bayer's ATR inhibitor as a monotherapy in patients with advanced metastatic solid tumors that were resistant or refractory to standard treatment. Of thirteen evaluable patients who received Bayer's ATR inhibitor at doses of 40 mg or greater twice a day, four patients, all of whom had tumors with mutations in ATM, had a durable tumor response. Additional clinical evidence indicates that the patient population that could benefit from an ATR inhibitor is not limited to ATM deficiency. For example, AstraZeneca conducted a clinical trial, which evaluated ATR inhibition as a monotherapy without any patient selection based on genomic tumor alterations. Results from this trial demonstrated that the three responding patients had normal ATM protein expression, which suggests that additional genomic tumor alterations may also be sensitive to ATR inhibition.

Our Solution, RP-3500

We identified ATR as one of the SL targets through our SNIPRx screen campaign of ATM and selected ATR as the target for our lead product candidate, RP-3500, based on:

- (i) existing third party clinical and preclinical support for the potential of ATR inhibition as a precision oncology therapy;
- (ii) our ability to design an ATR inhibitor with enhanced chemical properties, such as potency and selectivity; and

- (iii) the results of our STEP² screens, which identified 19 additional genomic alterations beyond ATM deficiency to be SL with ATR, facilitating the expansion of the addressable patient populations.

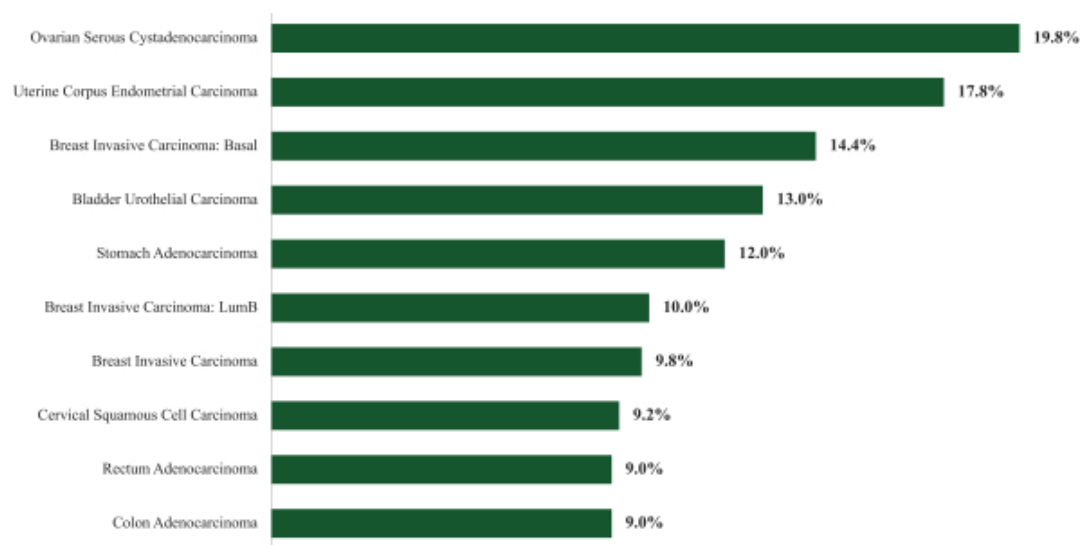
We designed RP-3500 as an oral small molecule ATR inhibitor with increased potency and a similar or improved selectivity profile compared to other known ATR inhibitors. RP-3500 has demonstrated a favorable pharmacokinetic profile in multiple preclinical models, including rodent and canine, and a distribution, metabolism and excretion profile that suggests a low potential for drug-drug interactions in the clinic.

Our STEP² screens have generated proprietary patient selection insights that we believe provide the rationale to expand the potential patient populations addressable by RP-3500 beyond patients with tumors carrying ATM genetic defects. We have identified 19 genomic alterations, in addition to ATM deficiency, that confer sensitivity to RP-3500. This 19 gene set, which we refer to as our STEP²-identified genes, includes several novel genes that have not been previously reported as rendering sensitivity to ATR inhibitors. In addition, many of the genes we have selected do not overlap with previously identified genes in the homologous recombination defect panel, which is utilized to identify patients for treatment with PARP inhibitors and is currently used by others to test for sensitivity to ATR inhibitors. Furthermore, our STEP² screens demonstrated that two genes previously reported by others to be sensitive to ATR inhibition were not sensitive and hence, those genes were excluded from our set of STEP²-identified genes.

The sensitivity and accuracy of our STEP² screens enable the identification of several novel gene alterations, including certain genes that are not yet included in commercially available Next Generation Sequencing cancer panels or CLIA-validated panels used in large academic centers. As such, for our planned Phase 1/2 trial, we have identified and partnered with multiple large, leading clinical centers globally where tumor sequencing is a component of standard of care. These centers' panels are validated and sufficiently large to accommodate screening for alterations in ATM or our 19 STEP²-identified genes. We believe that these panels will include the majority, if not all, of these 20 genes. For genes that are not available on certain panels at a particular clinical site, we have identified surrogate genes that are co-deleted with the STEP² genes and have an approximately 50% to 80% probability of concomitant loss, which we believe will provide sufficient enrichment for our clinical trial. By working in collaboration with our clinical partners to access their existing patient databases, we believe that we will be able to efficiently identify existing and new patients who may be eligible for our clinical trial.

Based on the prevalence of ATM deficiencies and our STEP2-identified genomic alterations across various solid tumors, as shown in the graph below, we believe that RP-3500 has the potential to benefit a significant number of patients representing a large unmet medical need.

Top 10 Tumor Types with Highest Prevalence of ATM Deficiency or STEP2 Genomic Alterations

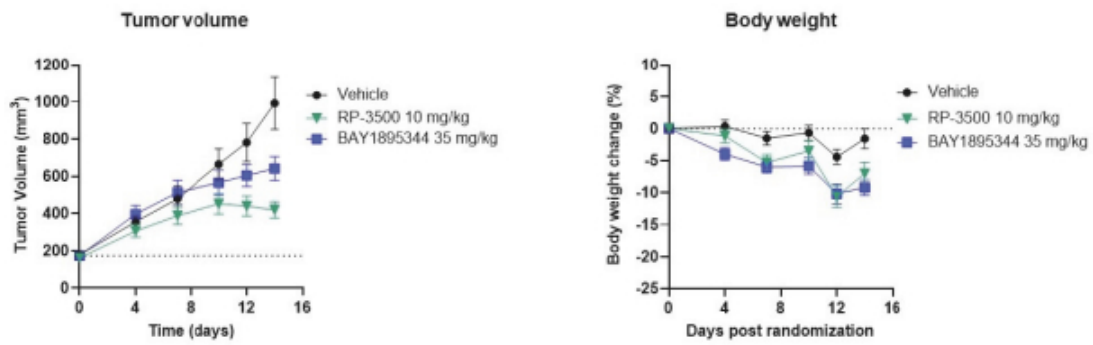


As part of our development strategy for RP-3500, we are evaluating the potential anti-tumor activity of RP-3500 in combination with an approved PARP inhibitor based on the synergies we have observed in our preclinical studies. PARP inhibitors lead to the stabilization of PARP-DNA complexes that block the progression of replication forks. ATR activity stabilizes the DNA replication forks that are destabilized by PARP inhibition and inhibition of ATR causes stalled replication forks to collapse and form cytotoxic DNA double-strand breaks. As a consequence, ATR inhibition can potentiate the cytotoxic effects of PARP inhibitors. We note that this phenomenon is particularly prominent under conditions where some cancer-relevant DDR genes, such as those identified through our STEP2 screens, are inactivated, thereby creating a potential therapeutic window.

Preclinical Data: Monotherapy

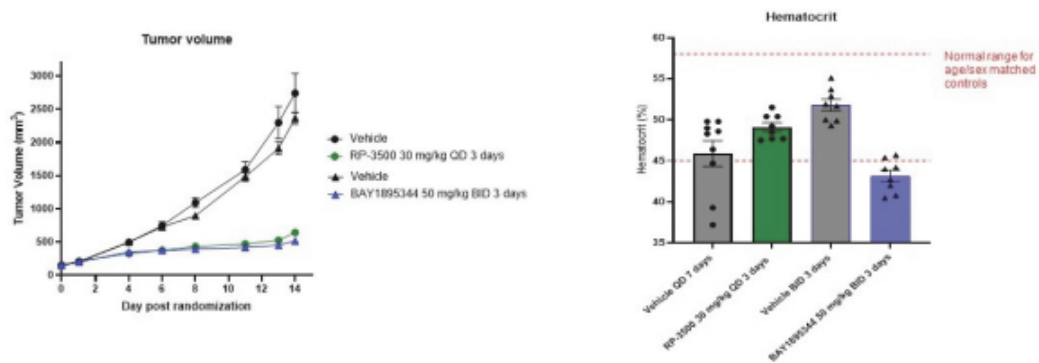
We observed RP-3500 to have a favorable tolerability and pharmacokinetics profile across multiple preclinical studies and animal models, which we believe supports advancing the product candidate into clinical trials. In a preclinical study, we evaluated continuous daily dosing of RP-3500 in a colon cancer xenograft model with CW-2 cancer cells, which contain an inactivating mutation in ATM that confers sensitivity to ATR inhibition. In this study, we injected mice with tumor cells and waited for tumor growth to approximately 200 mm³ before initiating daily dosing over a period of 14 days with vehicle, RP-3500 at its maximum tolerated dose, or MTD, of 10 mg/kg/day, or Bayer's ATR inhibitor product candidate, BAY1895344, at what we determined to be its MTD of 35 mg/kg/day (n=10 mice per group). Both RP-3500 and BAY1895344 demonstrated statistically significant suppression of tumor growth as compared to vehicle. Importantly, we observed statistically significant higher suppression of tumor growth with RP-3500 as compared to BAY1895344 (p=0.018). Body weight loss as a measurement of tolerability was similar for both compounds in this study.

Statistically Significant Tumor Growth Suppression in Colon Cancer Model



In another preclinical study using an intermittent dosing schedule, we evaluated RP-3500 in comparison to BAY1895344 in a Granta-519 mantle cell lymphoma xenograft model. Similar to CW-2 cancer cells, Granta-519 cancer cells also contain an inactivating mutation in ATM that confers sensitivity to ATR inhibition. In this study, we injected mice with tumor cells and waited for tumor growth to approximately 150 mm³ before initiating intermittent dosing with vehicle or either treatment (n=9 mice per group). We observed that both RP-3500 and BAY1895344 exhibited tolerability at higher doses when administered on a three days per week schedule than their respective MTDs from the daily dosing CW-2 colon cancer study. The MTDs utilizing this intermittent dosing schedule were determined to be 30 mg/kg daily for RP-3500 and 50 mg/kg twice-daily for BAY1895344. Both agents demonstrated similar and significant suppression of tumor growth in this model without body weight loss. However, significant anemia, or hematocrit reduction, was observed in mice treated with BAY1895344 (p=0.0002), whereas we did not observe these tolerability issues with RP-3500, which we believe supports our hypothesis of a favorable tolerability profile for RP-3500.

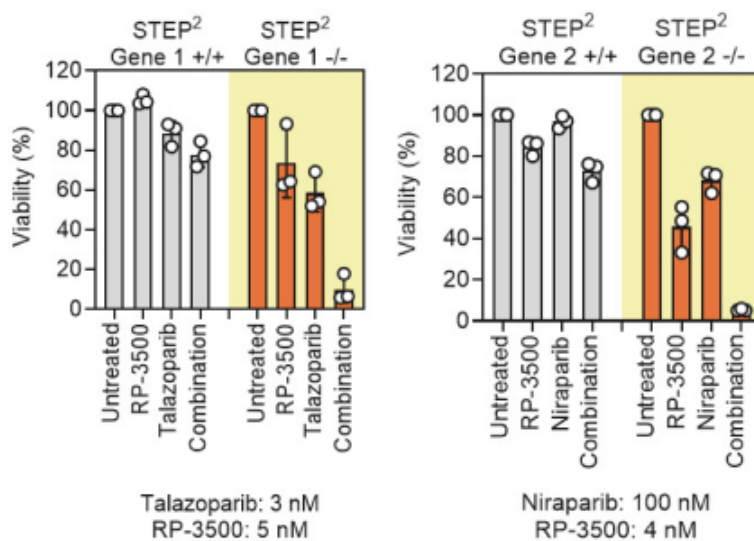
RP-3500 Exhibits Tumor Growth Suppression Without Significant Anemia Measured as Hematocrit in Mantle Cell Lymphoma Model



Preclinical Data: Combination Therapy with PARP

Of our 19 STEP²-identified genes for RP-3500 as a monotherapy, we have identified a subset of genes that are particularly sensitive to the combination of RP-3500 and PARP inhibitors. The graphs below illustrate two examples of this subset of genes where synergy was demonstrated between RP-3500 and PARP inhibitors.

Significant Synergy Demonstrated by Combination of RP-3500 and PARP Inhibitors



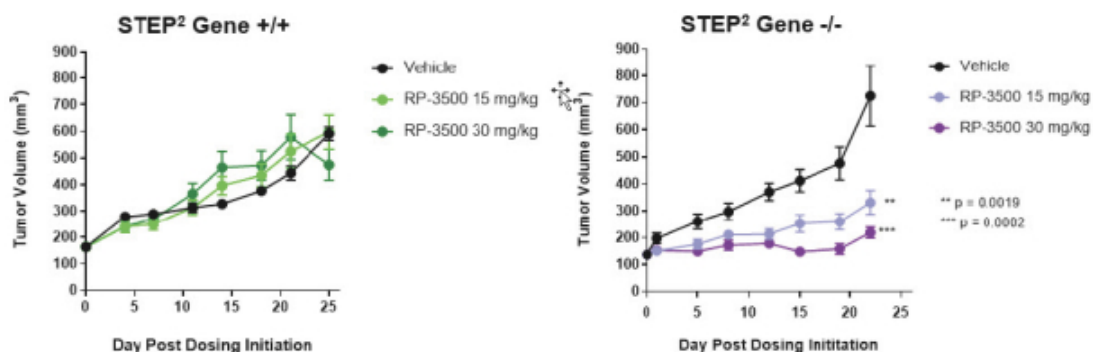
+/+ : Wild Type
-/- : Genomically altered

We observed *in vitro* killing of cells carrying this subset of genomic alterations at low concentrations of both compounds, whereas only a minimal effect was seen on control wild-type cells. Based on this finding, we believe that the combination of RP-3500 with lower doses of PARP inhibitors could lead to efficient anti-tumor activity while potentially addressing the tolerability issues observed with PARP inhibitors, where a majority of patients in clinical trials of niraparib and talazoparib required a dose reduction or interruption in dosing. We are currently exploring the ATR-PARP inhibitor synergy in additional ongoing studies in xenograft models.

Preclinical Validation of STEP2 Screens

Through our STEP2 screens of ATR inhibitors, we confirmed the SL relationship between ATR and ATM and identified an additional 19 genomic alterations that confer sensitivity to RP-3500. In follow-up studies with cancer cell line pairs, in which the only difference is the inactivation of the target genes, we are confirming the sensitivity of these genomic alterations to RP-3500, and this extensive validation effort is still being expanded. We are also creating xenograft models using both the parent cell lines and the inactivated cell line. In such a model using one of the STEP2-identified genes, RP-3500 led to statistically significant suppression of tumor growth, whereas it had no anti-tumor effect in tumors created with wild-type parent cells, as shown in the model below.

Tumor Growth Suppression in a STEP2 Gene Deficient (-/-) Xenograft Model vs. No Effect in Tumor with Wild-Type (+/+) STEP2 Gene



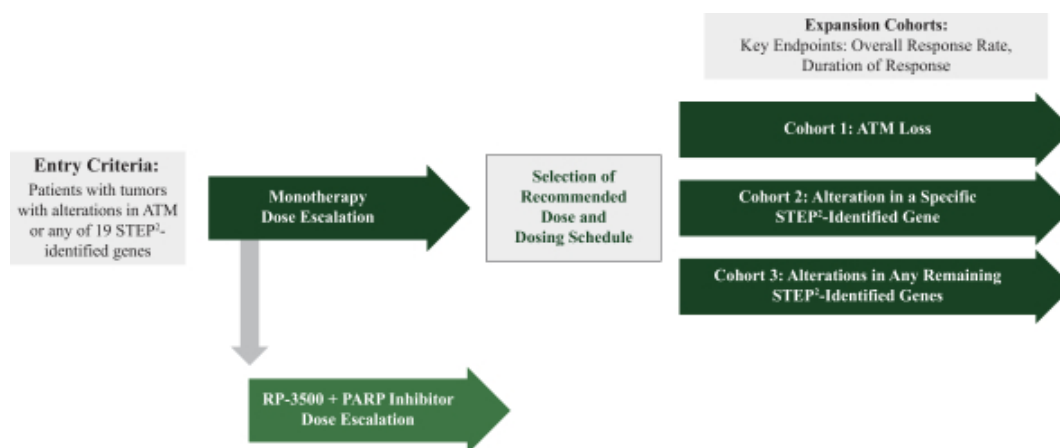
Planned Phase 1/2 Trial

Our open-label Phase 1/2 clinical trial is designed to evaluate the oral administration of RP-3500 in patients with advanced recurrent tumors of different histologies with ATM loss-of-function or any of the 19 STEP2-identified genomic alterations.

In the initial monotherapy dose escalation phase of our trial, we plan to evaluate the dosing regimen and safety of RP-3500 to establish the recommended dose for the expansion phase of the trial. In three expansion cohorts, each of which will enroll patients based on ATM loss-of-function or different STEP2-identified genomic alterations, we will assess the preliminary efficacy of RP-3500 at the recommended dose. In parallel with the monotherapy dose escalation phase, we will enroll a separate arm to evaluate RP-3500 in combination with an approved PARP inhibitor. An efficacy evaluation will be performed every six weeks for the first five months and every nine weeks thereafter. We anticipate filing an IND application in the second quarter of 2020 and initiating an open-label Phase 1/2 clinical trial of RP-3500 as both a monotherapy and in combination with an approved PARP inhibitor in the third quarter of 2020. We expect to report preliminary safety and efficacy data for the monotherapy and combination therapy dose escalation phase of the trial in the second half of 2021, which may inform the design, including the targeted patient population, of a future pivotal trial.

The design of our Phase 1/2 clinical trial is summarized in the diagram below.

Proposed Design of Phase 1/2 Clinical Trial of RP-3500



Our Preclinical Programs

CCNE1-SL Inhibitor Program

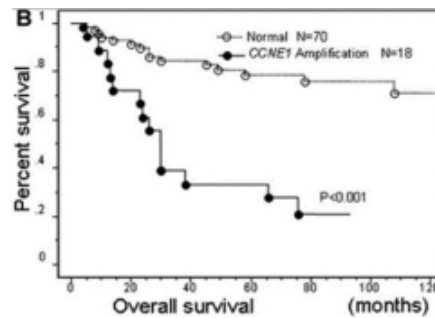
Our CCNE1-SL inhibitor program is a proprietary drug discovery program for tumors with amplification of CCNE1. We have identified an undisclosed gene and corresponding protein which we have found to be SL with amplifications in the gene for CCNE1. Amplification of CCNE1 is found in many tumor types, including gynecological and upper gastrointestinal malignancies, and these CCNE1-amplified tumors typically do not respond well to platinum or PARP inhibitor treatment. Through our SNIPRx screen campaign for targets that are SL with CCNE1 amplification, we have identified and validated a SL target that we believe has the characteristics of a therapeutic target. We have developed novel and selective inhibitors against the target that have repeatedly demonstrated compelling anti-tumor activity. We anticipate advancing our advancing a clinical candidate for this potential first-in-class program into IND-enabling studies in the fourth quarter of 2020.

The gene targeted by our CCNE1-SL inhibitor program has not previously been published as a SL gene pair with CCNE1, and we are not aware of any advanced drug discovery efforts against this target. In preclinical studies, we observed that the deletion of this gene was well tolerated in wild-type cells, but it caused lethality in isogenic cancer cells that overexpressed CCNE1.

[Table of Contents](#)

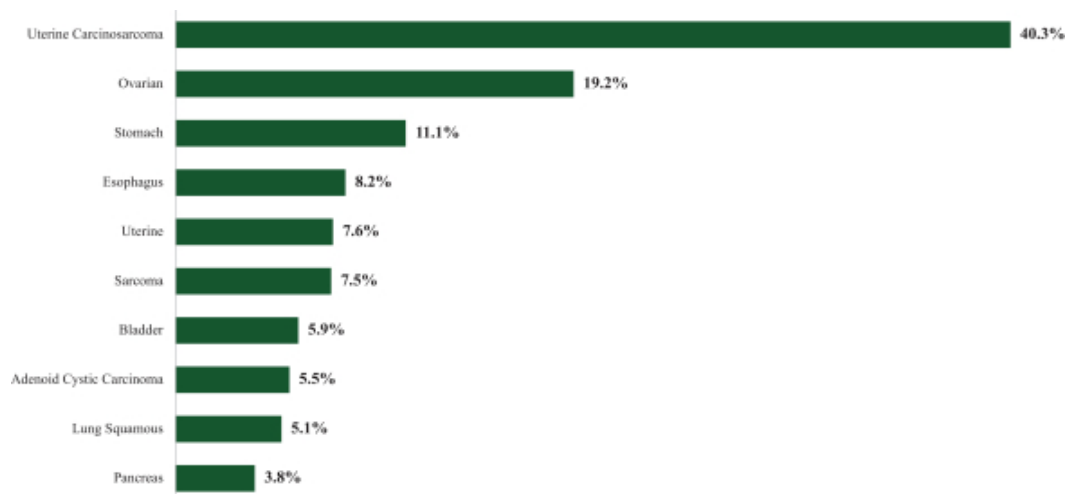
High levels of CCNE1 protein, an activating subunit of cyclin dependent kinase 2, or CDK2, are often observed in patients across multiple tumor types. Deregulation of cell cycle control is thought to be a prerequisite for tumor development, and several studies have demonstrated accelerated entry of cells into the S phase, or DNA synthesis phase, of the cell cycle, due to constitutive, or “always-on,” expression of CCNE1. Such an accelerated entry of cells into the S phase is a common sign of unregulated, cancerous growth. CCNE1 can induce chromosome instability, another sign of cancer, by contributing to inappropriate initiation of DNA replication. Several studies have demonstrated that CCNE1 amplification or constitutive expression is associated with disease progression in various malignancies as well as poor clinical prognosis in patients across multiple cancers, including ovarian, breast, bladder and colorectal cancer. For example, clinical data from patients with ovarian cancer indicate that those with CCNE1-amplified tumors have significantly shorter overall survival than those with tumors without CCNE1 amplification, as shown below.

CCNE1 Amplification is Associated with Significantly Shorter Overall Survival in Patients with Ovarian Cancer



CCNE1 amplification is found in 4% of tumors in the pan-cancer TCGA studies. Over 40% of uterine carcinosarcoma cancers and 10% to 20% of ovarian and stomach cancers harbor CCNE1 amplification. Together, these cancers lead to over 40,000 deaths each year in the United States. Additional cancer types also harbor CCNE1 amplification at a lower frequency, including up to 3% to 8% of esophagus, bladder, lung and pancreatic cancers, as shown below.

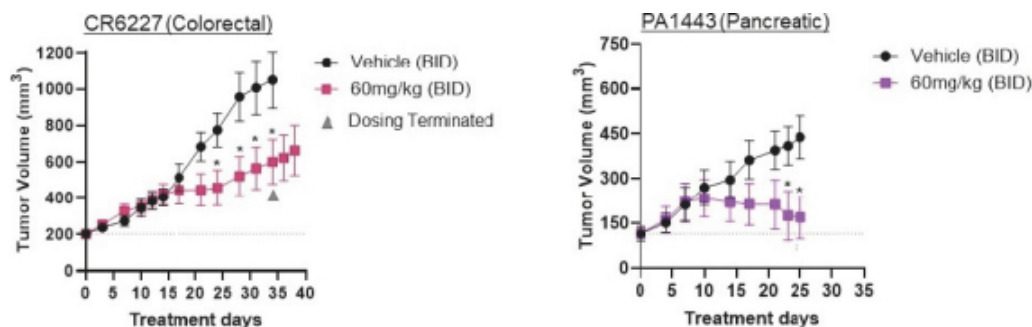
Top 10 Tumor Types with Highest Frequency of CCNE1 Amplification



[Table of Contents](#)

In preclinical studies, our CCNE1-SL inhibitor candidates demonstrated early *in vivo* anti-tumor activity in two patient-derived xenograft, or PDX, models with CCNE1 amplification. In the colorectal PDX model, we observed statistically significant tumor growth suppression with an unoptimized version of our CCNE1-SL inhibitor, as shown on the left below. In the pancreatic PDX model, which has a higher level of CCNE1 over-expression, tumor regression was observed with the same compound, as shown on the right below.

CCNE1-SL Inhibitor Demonstrates Tumor Growth Suppression in Patient-Derived Xenograft Models



Future Development Activities

We are currently evaluating additional genes identified through our STEP2 screens for our CCNE1-SL inhibitor candidates that we believe may be SL with our target. Some of the STEP2-identified genes are altered in 5% to 20% of certain cancers, including lung and prostate cancers, which we believe is indicative of a potential opportunity to address large patient populations with our CCNE1-SL inhibitor. We anticipate advancing a clinical candidate for this potential first-in-class program into IND-enabling studies program in the fourth quarter of 2020.

Polymerase Theta (Polq) Program

We are developing a small molecule inhibitor of polymerase theta, or Polq, a SL target associated with BRCA mutations as well as other genomic alterations. This program was initially added to our portfolio through a collaboration with our co-founder, Dr. Agnel Sfeir at NYU-Langone Medical Center, who initially published her early observations on the SL between BRCA and Polq in Nature in 2016.

Polymerase theta enzyme, or POLQ, is a DNA polymerase enzyme that participates in the repair of double-strand breaks in DNA. Mutations in genes such as BRCA1 and BRCA2 increase the frequency of these breaks, resulting in SL with Polq. Preclinical studies have shown that inactivation of Polq both on its own and in combination with PARP inhibitors reduces survival in BRCA-mutated cells, but not in BRCA wild-type cells. BRCA1 and BRCA2 mutations are routinely identified in multiple genetic profiling tests and observed in approximately 1% to 7% of patients with breast and ovarian cancer. However, the frequency of mutations in one of these BRCA genes increases in women with a family history of disease and in certain subpopulations. For example, up to 37% of patients with breast cancer with low estrogen and progesterone receptor expression have BRCA mutations.

BRCA1 and BRCA2 mutations have also been shown in clinical trials to be SL with PARP inhibitors in multiple tumors, such as breast and ovarian cancer. While PARP inhibitors have proven effective in BRCA-mutant tumors, no statistically significant survival benefit has been reported in breast or pancreatic cancer to date, highlighting the potential for other SL targets, such as Polq, to demonstrate meaningful efficacy as a monotherapy or in combination with PARP inhibitors. We anticipate advancing a clinical candidate and initiating IND-enabling studies for this program in the second half of 2021.

Intellectual Property

We strive to protect and enhance the proprietary technologies, inventions and improvements that we believe are important to our business, including seeking, maintaining and defending patent rights, whether developed internally or licensed from third parties. Our policy is to seek to protect our proprietary position by, among other methods, pursuing and obtaining patent protection in the United States and in jurisdictions outside of the United States related to our proprietary technology, inventions, improvements, platforms and our product candidates that are important to the development and implementation of our business.

As of May 29, 2020, our patent portfolio included four pending U.S. provisional patent applications, consisting of one application covering RP-3500 and its uses, one application covering uses of RP-3500, one application covering CCNE1-SL inhibitors and their use and one application covering uses of CCNE1-SL inhibitors. In addition, our patent portfolio included one pending international application under the Patent Cooperation Treaty of 1970, or the PCT, covering RP-3500 and its uses.

Our solely owned PCT application has composition of matter and method of treatment and use claims covering RP-3500 and its use. Any application, if issued, claiming priority to this PCT application is expected to expire in 2039, not including any patent term adjustment.

Individual patents extend for varying periods depending on the date of filing of the patent application or the date of patent issuance and the legal term of patents in the countries in which they are obtained. Generally, patents issued for regularly filed applications in the United States are granted a term of 20 years from the earliest effective non-provisional filing date. In addition, in certain instances, a patent term can be extended to recapture a portion of the U.S. Patent and Trademark Office, or the USPTO, delay in issuing the patent as well as a portion of the term effectively lost as a result of the FDA regulatory review period. However, as to the FDA component, the restoration period cannot be longer than five years and the total patent term including the restoration period must not exceed 14 years following FDA approval. The duration of foreign patents varies in accordance with provisions of applicable local law, but typically is also 20 years from the earliest effective filing date. However, the actual protection afforded by a patent varies on a product by product basis, from country to country and depends upon many factors, including the type of patent, the scope of its coverage, the availability of regulatory-related extensions, the availability of legal remedies in a particular country and the validity and enforceability of the patent.

The PCT is an international patent law treaty that provides a unified procedure for filing patent applications to protect inventions in each of its contracting states. Thus, a single PCT application can be converted into a patent application in any of the PCT-contracting states, and is considered a simple, cost-effective means for seeking patent protection in numerous regions or countries. This nationalization (converting into an application in any of the contracting states) typically occurs 18 months after the PCT application filing date. An applicant must undertake prosecution within the allotted time in each of the contracting states or on a regional basis if it determines to undertake patent issuance in protection in such country or territory. Pursuant to its PCT application, the Company expects to pursue patent protection in the United States

In addition, we rely upon trade secrets and know-how and continuing technological innovation to develop and maintain our competitive position. We seek to protect our proprietary information, in part, using confidentiality agreements with our collaborators, employees and consultants and invention assignment agreements with our employees. We also have confidentiality agreements or invention assignment agreements with our collaborators and consultants. These agreements are designed to protect our proprietary information and, in the case of the invention assignment agreements, to grant us ownership of technologies that are developed through a relationship with a third party. These agreements may be breached, and we may not have adequate remedies for any breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors. To the extent that our collaborators, employees and consultants use intellectual property owned by others in their work for us, disputes may arise as to the rights in related or resulting know-how and inventions.

Our commercial success will also depend in part on not infringing upon the proprietary rights of third parties. It is uncertain whether the issuance of any third-party patent would require us to alter our development or commercial strategies, or our product candidates or processes, obtain licenses or cease certain activities. Our breach of any license agreements or failure to obtain a license to proprietary rights that we may require to develop or commercialize our future product candidates may have an adverse impact on us. For more information, please see “Risk Factors—Risks Related to Intellectual Property.”

Collaborations and License Agreements

Collaboration and License Agreement with Bristol-Myers Squibb Company

In May 2020, we entered into a collaboration and license agreement, or the agreement, with Bristol-Myers Squibb Company, or Bristol Myers Squibb, pursuant to which we and Bristol Myers Squibb have agreed to collaborate in the research and development of potential new product candidates for the treatment of cancer. We are providing Bristol Myers Squibb access to a selected number of our existing early SNIPRx screening campaigns and novel campaigns. We are responsible for carrying out early stage research activities directed to identifying potential targets for potential licensing by Bristol Myers Squibb, in accordance with a mutually agreed upon research plan. The collaboration consists of programs directed to both druggable targets and to targets commonly considered undruggable by traditional small molecule approaches. In the event that Bristol Myers Squibb elects to obtain an exclusive license on for the subsequent development, manufacture and commercialization of a program, Bristol Myers Squibb will then be solely responsible for all such worldwide activities. The research collaboration will be overseen by a joint steering committee through completion of all research activities.

Under the terms of the agreement, Bristol Myers Squibb paid us an initial upfront fee payment of \$50 million. In connection with entering into the agreement, we entered into a warrant agreement with an affiliate of Bristol Myers Squibb pursuant to which we issued a warrant which will be automatically exercised into our common shares at the subscription price of \$15 million divided by the initial public offering price of our common shares in this offering; provided that, in the event that either the offering is not consummated by December 31, 2020 or we deliver to Bristol Myers Squibb a written notice to the effect that we are no longer pursuing this proposed offering, the warrant will be automatically exercised for a number of preferred shares. Based on an assumed initial public offering price of \$19.00 per share, the midpoint of the range set forth on the cover page of this prospectus, it is anticipated that Bristol Myers Squibb will acquire 789,474 of our common shares upon the automatic exercise of the warrant in connection with the consummation of this offering.

For each of the targets in the collaboration, we are entitled to receive, on a program-by-program basis, option exercise fees ranging in the low six figures depending on the nature of the applicable program. Bristol Myers Squibb has the right to retain rights to certain back-up programs in exchange for a one-time payment in the low eight figures per program. Additionally, we are entitled to receive additional fees ranging in the low to mid seven figures upon the selection of certain programs beyond a specified limit.

Under the agreement, we are entitled to receive up to \$3.0 billion in total milestones across all potential programs. Such milestones consist of \$301 million in total milestones per program, including \$176 million in the aggregate for certain specified research, development and regulatory milestones and \$125 million in the aggregate for certain specified commercial milestones. We are also entitled to a tiered percentage royalty on annual net sales ranging from high-single digits to low-double digits, subject to certain specified reductions. Royalties are payable by Bristol Myers Squibb on a licensed product-by-licensed product and country-by-country basis until the later of the expiration of the last valid claim covering the licensed product in such country, expiration of all applicable regulatory exclusivities in such country for such licensed product and the tenth anniversary of the first commercial sale of such licensed product in such country.

[Table of Contents](#)

On a program-by-program basis, prior to the earlier of such program ceasing to be included under our agreement with Bristol Myers Squibb and expiration of the last to expire royalty term for such program, we, alone and with third parties, are prohibited from researching, developing, manufacturing and commercializing products that are directed to the applicable target for such program.

We also have provided Bristol Myers Squibb with certain, limited rights to first negotiate with us if we determine to divest, license or collaborate with others regarding certain existing programs, including in the event that we received an unsolicited offer to do so. The right to first negotiation expressly excludes any potential Change of Control transaction (as such term is contractually defined in the agreement).

The agreement will expire, assuming that Bristol Myers Squibb has exercised at least one option for a program, on a licensed product-by-licensed product and country-by-country basis on expiration of the applicable royalty term and in its entirety upon expiration of the last royalty term. Either party may terminate the agreement earlier upon an uncured material breach of the agreement by the other party, or the insolvency of the other party. Additionally, Bristol Myers Squibb may terminate the agreement for any or no reason on a program-by-program basis upon specified written notice.

Research Services, License and Collaboration Agreement with Ono Pharmaceutical Co.

All payments by Ono to us are presented in U.S. dollars. Future payments as disclosed in this summary have been converted to U.S. dollars at the December 31, 2019 exchange rate of \$1.00 = 109.05 Japanese yen.

In January 2019, we entered into a research services, license and collaboration agreement, or the Ono Agreement, with Ono Pharmaceutical Co., Ltd., or Ono, pursuant to which we and Ono have agreed to collaborate in the research of potential product candidates targeting Polq and the development of our small molecule Polq inhibitor program. We are primarily responsible for carrying out research activities to identify a product candidate for the program, to be licensed to Ono, in accordance with a mutually agreed upon research plan until the first submission of an IND in the United States or Japan. In the event that Ono elects to collaborate on the subsequent development and commercialization of a proposed product candidate, Ono will then be responsible for such activities in Japan, South Korea, Taiwan, Hong Kong, Macau and certain other Southeast Asian countries, and we will be responsible for such activities in the rest of the world. The collaboration will be overseen by a joint research committee through development candidate selection and a joint steering committee thereafter. Except as set forth below, each party will bear its own expenses in connection with research, development and commercialization activities under the Ono Agreement.

Under the terms of the Ono Agreement, Ono paid us an initial upfront fee payment of ¥110 million (approximately \$1.0 million). Additionally, in connection with the research activities to be conducted by us pursuant to the Ono Agreement, Ono paid us an initial upfront research service payment of ¥790 million (approximately \$7.1 million) and has agreed to make research service payments up to an aggregate of ¥750 million (approximately \$6.9 million) upon (i) certain specified research triggers and (ii) the election by Ono to collaborate on the development and commercialization of a proposed product candidate. Upon election by Ono to collaborate on a proposed product candidate, Ono shall be responsible for a specified percentage of research and development costs for the IND-enabling studies of the selected product candidate.

Under the Ono Agreement, we are also entitled to receive up to ¥5.11 billion (approximately \$46.9 million) in the aggregate for certain specified development and regulatory milestones, ¥12.1 billion (approximately \$111.0 million) in the aggregate for certain specified commercial milestones and a tiered percentage royalty on annual net sales in Ono's territory ranging from high-single digits to low teens, subject to certain specified reductions. Royalties are payable by Ono on a licensed product-by-licensed product and country-by-country basis until the later of the expiration of the last valid claim covering the licensed product in such country and the tenth anniversary of the first commercial sale of such licensed product in such country.

During the term of the Ono Agreement, we, alone and with third parties, are prohibited from researching, developing, manufacturing and commercializing products that inhibit or modulate Polq as a mechanism of action in Ono's territory (as such term is defined in the Ono Agreement). During the term of the Ono Agreement, Ono, alone and with third parties, is prohibited from researching, developing, manufacturing and commercializing products, other than licensed products, that inhibit or modulate Polq as a mechanism of action in Ono's territory.

The collaboration and research obligations of the Ono Agreement may be terminated upon the mutual written consent of both parties on or before the two-year anniversary of the Ono Agreement. The Ono Agreement expires on the date of expiration of all royalty obligations. Either party may terminate the Ono Agreement earlier upon an uncured material breach of the agreement by the other party, the insolvency of the other party, or the initiation of an action challenging the validity or enforceability of a party's patents. Additionally, Ono may terminate the Ono Agreement for any or no reason on a product-by-product and country-by-country basis upon specified written notice, as well as on a product-by-product basis for safety or efficacy reasons upon abbreviated written notice. Moreover, in the event that we are acquired by a third party and after any such acquisition the acquirer initiates a competing program in Ono's territory, Ono will have the right to treat such initiation as a material breach.

License Agreement with New York University

In December 2016, we entered into a license agreement with New York University pursuant to which we obtained a worldwide, royalty-bearing, exclusive license under certain current and/or future patents and know-how of New York University to research, develop and commercialize products that are covered by such licensed patents or otherwise modulate Polq. Upon initial entry into the license agreement, we issued New York University 60,211 common shares in December 2016 as consideration for the license.

In July 2018, we subsequently amended and restated our license agreement with NYU, which we refer to, as amended and restated, as the NYU Agreement. Pursuant to the terms of the NYU Agreement, we are obligated to use reasonable diligence in connection with the research, development and commercialization of the licensed products (as such term is defined in the NYU Agreement), including specified minimum annual spends on research and development.

Under the terms of the NYU Agreement, we are obligated to pay New York University annual license maintenance fees in the low five figures that are creditable against any milestone payments payable in such year. Additionally, in connection with development, regulatory and commercial activities, we have agreed to make milestone payments of (i) \$2.6 million in the aggregate for a product covered by a licensed patent that achieves specified development and sales milestones for the first indication, (ii) \$1.3 million in the aggregate for a product covered by a licensed patent that achieves specified development and sales milestones for a second indication, (iii) \$575,000 in the aggregate for a product covered by a licensed patent that achieves specified development and sales milestones for each of a third and fourth indication, (iv) \$1.3 million in the aggregate for a product that is not covered by a licensed patent that achieves specified development and sales milestones for the first indication, (v) \$650,000 in the aggregate for a product that is not covered by a licensed patent that achieves specified development and sales milestones for a second indication, (vi) \$287,500 in the aggregate for a product that is not covered by a licensed patent that achieves specified development and sales milestones for each of a third and fourth indication. We have the right to reduce these milestone payments by a specified amount of any milestones payable to a third party for a license required for the commercialization of a product candidate.

We are also obligated to pay New York University a low single digit royalty on net sales of any product covered by a licensed patent and a lower single digit royalty on net sales of any product that is not covered by a licensed patent, in each case subject to reduction by a specified amount of any royalties payable to a third party for a license to unblocking intellectual property. Moreover, we are obligated to pay New York University a percentage of any non-royalty consideration received by us from a sublicensee ranging in the low double digits.

[Table of Contents](#)

Ono is considered a sublicensee under the terms of the NYU Agreement. Accordingly, we have paid New York University a specified percentage of the approximately \$1.0 million initial upfront fee payment we received from Ono and we will be required to pay New York University a percentage between the high teens and low twenties of any future payments received under the Ono Agreement from Ono for development, regulatory and commercial milestones, as well as low single digit royalties on annual net sales in Ono's territory.

Payments in respect of net sales or sublicense in a country shall remain in force on a product-by-product, country-by-country basis, with respect to (i) products that are not covered by a licensed patent, for ten years from the date of first commercial sale in such country and (ii) products that are covered by a licensed patent, until the expiration date of the last to expire of the licensed patents covering such product or its manufacture or use in the applicable country.

The NYU Agreement expires on the date of expiration of all royalty obligations. Either party may terminate the NYU Agreement earlier upon an uncured material breach of NYU Agreement by the other party or the insolvency of the other party.

Sales and Marketing

Given our stage of development, we have not yet established a commercial organization or distribution capabilities. We have established a wholly-owned U.S. subsidiary, Repare Therapeutics USA Inc., a Delaware corporation with operations in Cambridge, Massachusetts, to support our clinical development program and our potential commercialization efforts in the United States.

Manufacturing

We currently rely, and expect to continue to rely for the foreseeable future, on third-party contract manufacturing organizations, or CMOs, to produce our product candidates for preclinical and clinical testing, as well as for future commercial manufacture of any products that we may commercialize.

We require all of our CMOs to conduct manufacturing activities in compliance with current good manufacturing practice, or cGMP, requirements. We have assembled a team of experienced employees and consultants to provide the necessary technical, quality and regulatory oversight over our CMOs. Currently, we have manufacturing and supply agreements with our CMOs for the manufacture of RP-3500 and our preclinical candidates, including the synthesis of the active pharmaceutical ingredient, or API, as well as drug product.

All of our product candidates are small molecules and are manufactured in synthetic processes from available starting materials. The chemistry underlying our product candidates appears amenable to scale up and does not currently require unusual equipment in the manufacturing process. We expect to continue to develop product candidates that can be produced cost-effectively at contract manufacturing facilities.

We plan to continue to rely on third-party manufacturers for any future trials and commercialization of RP-3500 and any future product candidates, if approved. We anticipate that these CMOs will have capacity to support commercial scale production, but we do not have any formal agreements in place at this time given our early stages of development. If needed, we believe we can identify and establish additional CMOs to provide API and finished drug product without significant disruption to our business or clinical development timelines.

Competition

The biotechnology and pharmaceutical industries are characterized by the rapid evolution of technologies and understanding of disease etiology, intense competition and a strong emphasis on intellectual property. We believe that our approach, strategy, scientific capabilities, know-how and experience provide us with competitive advantages. However, we expect substantial competition from multiple sources, including major pharmaceutical,

[Table of Contents](#)

specialty pharmaceutical, and existing or emerging biotechnology companies, academic research institutions and governmental agencies and public and private research institutions worldwide. Many of our competitors, either alone or with their collaborations, 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. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient enrollment in clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. As a result, our competitors may discover, develop, license or commercialize products before or more successfully than we do.

We face competition from segments of the pharmaceutical, biotechnology and other related markets that pursue the development of precision oncology therapies for patients with genetically-defined cancers. Several biopharmaceutical companies, including Loxo Oncology, Inc. (recently acquired by Eli Lilly and Company), Blueprint Medicines Corporation, Agios Pharmaceuticals, Inc., SpringWorks Therapeutics, Inc., Black Diamond Therapeutics, Inc., Deciphera Pharmaceuticals, Inc. and Turning Point Therapeutics, Inc., are developing precision oncology medicines. In addition, we may face competition from companies developing product candidates that are based on SL, including AstraZeneca, GlaxoSmithKline, Pfizer, Bayer, Merck Serono, Artios Pharma Ltd. and IDEAYA Biosciences, Inc.

Furthermore, we also face competition more broadly across the oncology market for cost-effective and reimbursable cancer treatments. The most common methods of treating patients with cancer are surgery, radiation and drug therapy, including chemotherapy, hormone therapy, biologic therapy, such as monoclonal and bispecific antibodies, immunotherapy, cell-based therapy and targeted therapy, or a combination of any such methods. There are a variety of available drug therapies marketed for cancer. In many cases, these drugs are administered in combination to enhance efficacy. While our product candidates, if any are approved, may compete with these existing drugs and other therapies, to the extent they are ultimately used in combination with or as an adjunct to these therapies, our product candidates may not be competitive with them. Some of these drugs are branded and subject to patent protection, and others are available on a generic basis. Insurers and other third-party payors may also encourage the use of generic products or specific branded products. As a result, obtaining market acceptance of, and gaining significant share of the market for, any of our product candidates that we successfully introduce to the market may pose challenges. In addition, many companies are developing new oncology therapeutics, and we cannot predict what the standard of care will be as our product candidates progress through clinical development.

With respect to our lead product candidate, RP-3500, several companies are developing ATR inhibitors with multiple monotherapy and/or combination trials ongoing, including AstraZeneca (AZD6738), Bayer (BAY1895344) and Merck Serono (M4344). In addition, companies such as Artios Pharma and Atrin Pharmaceuticals have ATR inhibitors in preclinical development.

For our CCNE1-SL inhibitor program, we are not aware of any companies or institutions with programs in development for this target.

For our preclinical Polq program, both Artios Pharma and IDEAYA Biosciences have Polq programs in the preclinical stages of development.

We could see a reduction or elimination in our commercial opportunity if our competitors develop and commercialize drugs that are safer, more effective, have fewer or less severe side effects, are more convenient to administer, are less expensive or with a more favorable label than our product candidates. Our competitors also may obtain FDA or other regulatory approval for their drugs 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. The key competitive factors affecting the success of all of our product candidates, if approved, are likely

to be their efficacy, safety, convenience, price, the level of generic competition and the availability of reimbursement from government and other third-party payors.

Government Regulation

The FDA and comparable regulatory agencies in state and local jurisdictions and in foreign countries impose substantial requirements upon the clinical development, manufacture and marketing of pharmaceutical products. These agencies and other federal, state and local entities regulate research and development activities and the testing, manufacture, quality control, safety, effectiveness, labeling, storage, packaging, recordkeeping, tracking, approval, import, export, distribution, advertising and promotion of our products.

U.S. Government Regulation of Drug Products

In the United States, the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act, or FDCA, and its implementing regulations. The process of obtaining regulatory approvals and the subsequent compliance with applicable federal, state, local and foreign statutes and regulations requires the expenditure of substantial time and financial resources. Failure to comply with the applicable U.S. requirements at any time during the product development process, approval process or after approval, may subject an applicant to a variety of administrative or judicial sanctions, such as the FDA's refusal to approve a pending New Drug Application, or NDA, withdrawal of an approval, imposition of a clinical hold, issuance of warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement or civil or criminal penalties.

The process required by the FDA before product candidates may be marketed in the United States generally involves the following:

- nonclinical laboratory and animal tests that must be conducted in accordance with good laboratory practices, or GLPs;
- submission to the FDA of an investigational new drug application, or IND, which must become effective before clinical trials may begin;
- approval by an independent institutional review board, or IRB, for each clinical site or centrally before each trial may be initiated;
- adequate and well-controlled human clinical trials to establish the safety and efficacy of the proposed product candidate for its intended use, performed in accordance with good clinical practices, or GCPs;
- submission to the FDA of an NDA and payment of user fees;
- satisfactory completion of an FDA advisory committee review, if applicable;
- pre-approval inspection of manufacturing facilities and selected clinical investigators for their compliance with cGMP and good clinical practices, or GCPs;
- satisfactory completion of FDA audits of clinical trial sites to assure compliance with GCPs and the integrity of the clinical data;
- FDA review and approval of an NDA to permit commercial marketing for particular indications for use; and
- compliance with any post-approval requirements, including the potential requirement to implement a Risk Evaluation and Mitigation Strategy, or REMS, and the potential requirement to conduct post-approval studies.

The testing and approval process requires substantial time, effort and financial resources.

Preclinical Studies

Preclinical studies include laboratory evaluation of drug substance chemistry, pharmacology, toxicity and drug product formulation, as well as animal studies to assess potential safety and efficacy. Prior to commencing the first clinical trial with a product candidate, a sponsor must submit the results of the preclinical tests and preclinical literature, together with manufacturing information, analytical data and any available clinical data or literature, among other required information, to the FDA as part of an IND. Some preclinical studies may continue even after the IND is submitted. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day time period, raises safety concerns or questions about the conduct of the clinical trial and imposes a clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. As a result, submission of an IND may not result in FDA authorization to commence a clinical trial.

Clinical Trials

Clinical trials involve the administration of the investigational new drug to human subjects under the supervision of qualified investigators in accordance with GCP requirements. A separate submission to the existing IND must be made for each successive clinical trial conducted during product development, as well as amendments to previously submitted clinical trials. Further, an independent IRB for each institution participating in the clinical trial must review and approve the plan for any clinical trial, its informed consent form and other communications to study subjects before the clinical trial commences at that site. The IRB must continue to oversee the clinical trial while it is being conducted, including any changes to the study plans.

Regulatory authorities, an IRB or the sponsor may suspend or discontinue a clinical trial at any time on various grounds, including a finding that the subjects are being exposed to an unacceptable health risk, the clinical trial is not being conducted in accordance with the FDA's or the IRB's requirements, or if the drug has been associated with unexpected serious harm to subjects. Some studies also include a data safety monitoring board, which receives special access to unblinded data during the clinical trial and may advise the sponsor to halt the clinical trial if it determines that there is an unacceptable safety risk for subjects or other grounds, such as no demonstration of efficacy.

In general, for purposes of NDA approval, human clinical trials are typically conducted in three sequential phases that may overlap.

- Phase 1—Studies are initially conducted to test the product candidate for safety, dosage tolerance, structure-activity relationships, mechanism of action, absorption, metabolism, distribution and excretion in healthy volunteers or subjects with the target disease or condition. If possible, Phase 1 clinical trials may also be used to gain an initial indication of product effectiveness.
- Phase 2—Controlled studies are conducted with groups of subjects with a specified disease or condition to provide enough data to evaluate the preliminary efficacy, optimal dosages and dosing schedule and expanded evidence of safety. Multiple Phase 2 clinical trials may be conducted to obtain information prior to beginning larger and more expansive Phase 3 clinical trials.
- Phase 3—These clinical trials are generally undertaken in larger subject populations to provide statistically significant evidence of clinical efficacy and to further test for safety in an expanded subject population at multiple clinical trial sites. These clinical trials are intended to establish the overall risk/benefit ratio of the product and provide an adequate basis for product labeling. These clinical trials may be done at trial sites outside the United States as long as the global sites are also representative of the U.S. population and the conduct of the study at global sites comports with FDA regulations and guidance, such as compliance with GCPs.

The FDA may require, or companies may pursue, additional clinical trials after a product is approved. These so-called Phase 4 studies may be made a condition to be satisfied after approval. The results of Phase 4 studies can confirm the effectiveness of a product candidate and can provide important safety information.

[Table of Contents](#)

Clinical trials must be conducted under the supervision of qualified investigators in accordance with GCP requirements, which include the requirements that all research subjects provide their informed consent in writing for their participation in any clinical trial, and the review and approval of the study by an IRB. Investigators must also provide information to the clinical trial sponsors to allow the sponsors to make specified financial disclosures to the FDA. Clinical trials are conducted under protocols detailing, among other things, the objectives of the trial, the trial procedures, the parameters to be used in monitoring safety and the efficacy criteria to be evaluated and a statistical analysis plan. Information about some clinical trials, including a description of the trial and trial results, must be submitted within specific timeframes to the National Institutes of Health for public dissemination on their ClinicalTrials.gov website. Progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA and more frequently if serious adverse events occur.

The manufacture of investigational drugs for the conduct of human clinical trials is subject to cGMP requirements. Investigational drugs and active pharmaceutical ingredients imported into the United States are also subject to regulation by the FDA relating to their labeling and distribution. Further, the export of investigational drug products outside of the United States is subject to regulatory requirements of the receiving country as well as U.S. export requirements under the FDCA. Progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA and the IRB and more frequently if serious adverse effects occur.

Concurrent with clinical trials, companies usually complete additional animal studies and must also develop additional information about the chemistry and physical characteristics of the product candidate as well as finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, must develop methods for testing the identity, strength, quality 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.

Special FDA Expedited Review and Approval Programs

The FDA has various programs, including fast track designation, breakthrough therapy designation, accelerated approval, and priority review, which are intended to expedite or simplify the process for the development and FDA review of drugs that are intended for the treatment of serious or life threatening diseases or conditions and demonstrate the potential to address unmet medical needs. The purpose of these programs is to provide important new drugs to patients earlier than under standard FDA review procedures.

Under the fast track program, the sponsor of a new drug candidate may request that FDA designate the drug candidate for a specific indication as a fast track drug concurrent with, or after, the filing of the IND for the drug candidate. 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. The FDA will determine that a product will fill an unmet medical need if it will provide a therapy where none exists or provide a therapy that may be potentially superior to existing therapy based on efficacy or safety factors. Fast track designation provides additional opportunities for interaction with the FDA's review team and may allow for rolling review of NDA components before the completed application is submitted, if the sponsor provides a schedule for the submission of the sections of the NDA, the FDA agrees to accept sections of the NDA and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the NDA. However, the FDA's time period goal for reviewing an application does not begin until the last section of the NDA is submitted. The FDA may decide to rescind the fast track designation if it determines that the qualifying criteria no longer apply.

In addition, a sponsor can request breakthrough therapy designation for a drug if it is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition, and

[Table of Contents](#)

preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. Drugs designated as breakthrough therapies are eligible for intensive guidance from the FDA on an efficient drug development program, organizational commitment to the development and review of the product including involvement of senior managers, and, like fast track products, are also eligible for rolling review of the NDA. Both fast track and breakthrough therapy products may be eligible for accelerated approval and/or priority review, if relevant criteria are met.

Under the FDA's accelerated approval regulations, the FDA may approve a drug for a serious or life threatening illness that provides meaningful therapeutic benefit to patients over existing treatments based upon a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. A drug 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 confirm a clinical benefit during post marketing studies, will allow the FDA to withdraw the drug from the market on an expedited basis. All promotional materials for drug candidates approved under accelerated approval regulations are subject to prior review by the FDA.

Once an NDA is submitted for a product intended to treat a serious condition, the FDA may assign a priority review designation if FDA determines that the product, if approved, would provide a significant improvement in safety or effectiveness. A priority review means that the goal for the FDA to review an application is six months, rather than the standard review of ten months under the Prescription Drug User Fee Act, or PDUFA, guidelines. Under the current PDUFA performance goals, these six and ten month review periods are measured from the 60-day filing date rather than the receipt date for NDAs for new molecular entities, which typically adds approximately two months to the timeline for review from the date of submission.

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. In addition, the manufacturer of an investigational drug for a serious or life threatening disease is required to make available, such as by posting on its website, its policy on responding to requests for expanded access. Furthermore, fast track designation, breakthrough therapy designation, accelerated approval and priority review do not change the standards for approval and may not ultimately expedite the development or approval process.

NDA Submission and Review by the FDA

Assuming successful completion of the required clinical and preclinical testing, among other items, the results of product development, including chemistry, manufacture and controls, nonclinical studies and clinical trials are submitted to the FDA, along with proposed labeling, as part of an NDA. The submission of an NDA requires payment of a substantial user fee to the FDA. These user fees must be filed at the time of the first submission of the application, even if the application is being submitted on a rolling basis. Fee waivers or reductions are available in some circumstances. One basis for a waiver of the application user fee is if the applicant employs fewer than 500 employees, including employees of affiliates, the applicant does not have an approved marketing application for a product that has been introduced or delivered for introduction into interstate commerce, and the applicant, including its affiliates, is submitting its first marketing application.

In addition, under the Pediatric Research Equity Act, an NDA or supplement to an NDA for a new active ingredient, indication, dosage form, dosage regimen or route of administration must contain data that are adequate to assess the safety and efficacy 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 product is safe and effective.

[Table of Contents](#)

The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults or full or partial waivers from the pediatric data requirements.

The FDA must refer applications for drugs that contain active ingredients, including any ester or salt of the active ingredients, that have not previously been approved by the FDA to an advisory committee or provide in an action letter a summary of the reasons for not referring it to an advisory committee. The FDA may also refer drugs which present difficult questions of safety, purity or potency to an advisory committee. An advisory committee is typically a panel that includes clinicians and other experts who review, evaluate and make a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

The FDA reviews applications to determine, among other things, whether a product is safe and effective for its intended use and whether the manufacturing controls are adequate to assure and preserve the product's identity, strength, quality and purity. Before approving an NDA, the FDA will inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities, including contract manufacturers and subcontracts, are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. Additionally, before approving an NDA, the FDA will typically inspect one or more clinical trial sites to assure compliance with GCPs.

Once the FDA receives an application, it has 60 days to review the NDA to determine if it is substantially complete to permit a substantive review, before it accepts the application for filing. Once the submission is accepted for filing, the FDA begins an in-depth review of the NDA. Under the goals and policies agreed to by the FDA under PDUFA, the FDA has set the review goal of 10 months from the 60-day filing date to complete its initial review of a standard NDA for a new molecular entity, or NME, and make a decision on the application. For priority review applications, the FDA has set the review goal of reviewing NME NDAs within six months of the 60-day filing date. Such deadlines are referred to as the PDUFA date. The PDUFA date is only a goal and the FDA does not always meet its PDUFA dates. The review process and the PDUFA date may also be extended if the FDA requests or the NDA sponsor otherwise provides additional information or clarification regarding the submission during the review period that amends the original application.

Once the FDA's review of the application is complete, the FDA will issue either a Complete Response Letter, or CRL, or approval letter. A CRL indicates that the review cycle of the application is complete and the application is not ready for approval. A CRL generally contains a statement of specific conditions that must be met in order to secure final approval of the NDA and may require additional clinical or preclinical testing, or other information or analyses in order for the FDA to reconsider the application in the future. Even with the submission of additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval. If and when those conditions have been met to the FDA's satisfaction, the FDA may issue an approval letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications.

The FDA may delay or refuse approval of an NDA if applicable regulatory criteria are not satisfied, require additional testing or information and/or require post-marketing testing and surveillance to monitor safety or efficacy of a product, or impose other conditions, including distribution restrictions or other risk management mechanisms. For example, the FDA may require a REMS as a condition of approval or following approval to mitigate any identified or suspected serious risks and ensure safe use of the drug. The FDA may prevent or limit further marketing of a product, or impose additional post-marketing requirements, based on the results of post-marketing studies or surveillance programs. 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, FDA notification and FDA review and approval. Further, should new safety information arise, additional testing, product labeling or FDA notification may be required.

If regulatory approval of a product is granted, such approval may entail limitations on the indicated uses for which such product may be marketed or may include contraindications, warnings or precautions in the product labeling, which has resulted in a boxed warning. A boxed warning is the strictest warning put in the labeling of prescription drugs or drug products by the FDA when there is reasonable evidence of an association of a serious hazard with the drug. The FDA also may not approve the inclusion of all labeling claims sought by an applicant. Once approved, the FDA may withdraw the product approval if compliance with pre- and post-marketing regulatory standards is not maintained or if problems occur after the product reaches the marketplace. In addition, the FDA may require Phase 4 post-marketing studies to monitor the effect of approved products, and may limit further marketing of the product based on the results of these post-marketing studies.

U.S. Post-Approval Requirements

Any products manufactured or distributed by us pursuant to FDA approvals are subject to continuing regulation by the FDA, including periodic reporting, product sampling and distribution, advertising, promotion, drug shortage reporting, compliance with any post-approval requirements imposed as a conditional of approval such as Phase 4 clinical trials, REMS and surveillance, recordkeeping and reporting requirements, including adverse experiences.

After approval, most changes to the approved product, such as adding new indications or other labeling claims are subject to prior FDA review and approval. There also are continuing, annual program fee requirements for approved products, as well as new application fees for supplemental applications with clinical data. Drug manufacturers and their subcontractors are required to register their establishments with the FDA and certain state agencies and to list their drug products, and are subject to periodic announced and unannounced inspections by the FDA and these state agencies for compliance with cGMPs and other requirements, which impose procedural and documentation requirements.

Changes to the manufacturing process are strictly regulated and often require prior FDA approval before being implemented, or FDA notification. FDA regulations also require investigation and correction of any deviations from cGMPs and specifications, and impose reporting and documentation requirements upon the sponsor and any third-party manufacturers that the sponsor may decide to use. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain cGMP compliance.

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 withdrawal of marketing approval, mandatory revisions to the approved labeling to add new safety information or other limitations, imposition of post-market studies or clinical trials to assess new safety risks, or imposition of distribution or other restrictions under a REMS program, among other consequences.

The FDA closely regulates the marketing and promotion of drugs. A company can make only those claims relating to safety and efficacy that are consistent with the FDA approved labeling. Physicians, in their independent professional medical judgement, may prescribe legally available products for uses that are not described in the product's labeling and that differ from those tested by us and approved by the FDA. However, manufacturers and third parties acting on their behalf are prohibited from marketing or promoting drugs in a manner inconsistent with the approved labeling. 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.

Failure to comply with any of the FDA's requirements could result in significant adverse enforcement actions. These include a variety of administrative or judicial sanctions, such as refusal to approve pending applications, license suspension or revocation, withdrawal of an approval, imposition of a clinical hold or termination of clinical trials, warning letters, untitled letters, modification of promotional materials or labeling,

product recalls, product seizures or detentions, refusal to allow imports or exports, total or partial suspension of production or distribution, debarment, injunctions, fines, consent decrees, corporate integrity agreements, refusals of government contracts and new orders under existing contracts, exclusion from participation in federal and state healthcare programs, restitution, disgorgement or civil or criminal penalties, including fines and imprisonment. It is also possible that failure to comply with the FDA's requirements relating to the promotion of prescription drugs may lead to investigations alleging violations of federal and state healthcare fraud and abuse and other laws, as well as state consumer protection laws. Any of these sanctions could result in adverse publicity, among other adverse consequences.

U.S. Marketing Exclusivity

The FDA provides periods of non-patent regulatory exclusivity, which provides the holder of an approved NDA limited protection from new competition in the marketplace for the innovation represented by its approved drug for a period of three or five years following the FDA's approval of the NDA. Five years of exclusivity are available to new chemical entities, or NCEs. An NCE is a drug that contains no active moiety that has been approved by the FDA in any other NDA. An active moiety is the molecule or ion, excluding those appended portions of the molecule that cause the drug to be an ester, salt, including a salt with hydrogen or coordination bonds, or other noncovalent, or not involving the sharing of electron pairs between atoms, derivatives, such as a complex (i.e., formed by the chemical interaction of two compounds), chelate (i.e., a chemical compound), or clathrate (i.e., a polymer framework that traps molecules), of the molecule, responsible for the therapeutic activity of the drug substance. During the exclusivity period, the FDA may not accept for review or approve an Abbreviated New Drug Application, or ANDA, or a 505(b)(2) NDA submitted by another company that contains the previously approved active moiety. An ANDA or 505(b)(2) application, however, may be submitted one year before NCE exclusivity expires if a Paragraph IV certification is filed.

Regulation outside the United States

We will be subject to similar foreign laws and regulations concerning the development of our product candidates outside of the United States.

Other Healthcare Laws and Regulations

Our business activities, including but not limited to, research, sales, promotion, distribution, medical education and other activities are subject to regulation by numerous regulatory and law enforcement authorities in the United States in addition to the FDA, including the Department of Justice, the Department of Health and Human Services, or HHS, and its various divisions, including Centers for Medicare & Medicaid Services, or CMS, and the Health Resources and Services Administration, the Department of Veterans Affairs, the Department of Defense and state and local governments. Our business activities must comply with numerous healthcare laws and regulations, including those described below.

The federal Anti-Kickback Statute prohibits, among other things, any person or entity, from knowingly and willfully offering, paying, soliciting or receiving any remuneration, directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward, or in return for, the referral of an individual for, or purchasing, leasing, ordering, or arranging for the purchase, lease or order of, any good, facility, item or service reimbursable under Medicare, Medicaid or other federal healthcare programs. The Anti-Kickback Statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand and prescribers, purchasers, and formulary managers on the other hand. The term remuneration has been interpreted broadly to include anything of value. There are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution. The exceptions and safe harbors are drawn narrowly and require strict compliance in order to offer protection. Practices that involve remuneration that may be alleged to be intended to induce prescribing, purchasing or recommending may be subject to scrutiny if they do not qualify for an exception or safe harbor. Failure to meet all of the requirements of a particular applicable statutory exception or regulatory

[Table of Contents](#)

safe harbor does not make the conduct per se illegal under the federal Anti-Kickback Statute. Instead, the legality of the arrangement will be evaluated on a case-by-case basis based on a cumulative review of all of its facts and circumstances. Additionally, the Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education Reconciliation Act of 2010, or collectively the ACA, amended the intent requirement of the federal Anti-Kickback Statute, and other healthcare criminal fraud statutes, so that a person or entity no longer needs to have actual knowledge of the federal Anti-Kickback Statute, or the specific intent to violate it, to have violated the statute. The ACA also provided that a violation of the federal Anti-Kickback Statute is grounds for the government or a whistleblower to assert that a claim for payment of items or services resulting from such violation constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act, or FCA.

The federal civil and criminal false claims laws, including the FCA, prohibit, among other things, any person or entity from knowingly presenting, or causing to be presented, a false claim for payment to, or approval by, the U.S. federal government, including the Medicare and Medicaid programs, or knowingly making, using, or causing to be made or used a false record or statement material to a false or fraudulent claim or to avoid, decrease or conceal an obligation to pay money to the federal government. As a result of a modification made by the Fraud Enforcement and Recovery Act of 2009, a claim includes “any request or demand” for money or property presented to the U.S. government. In addition, manufacturers can be held liable under the FCA even when they do not submit claims directly to government payors if they are deemed to “cause” the submission of false or fraudulent claims. The FCA also permits a private individual acting as a “whistleblower” to bring actions on behalf of the federal government alleging violations of the FCA and to share in any monetary recovery. FCA liability is potentially significant in the healthcare industry because the statute provides for treble damages and mandatory penalties. Government enforcement agencies and private whistleblowers have investigated pharmaceutical companies for or asserted liability under the FCA for a variety of alleged promotional and marketing activities, such as providing free products to customers with the expectation that the customers would bill federal programs for the products; providing consulting fees and other benefits to physicians to induce them to prescribe products; engaging in promotion for “off-label” uses; and submitting inflated best price information to the Medicaid Rebate Program.

The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, created additional federal criminal statutes that prohibits, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program or obtain, by means of false or fraudulent pretenses, representations or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, regardless of whether the payor is public or private, knowingly and willfully embezzling or stealing from a health care benefit program, willfully obstructing a criminal investigation of a health care offense and knowingly and willfully falsifying, concealing or covering up by any trick, scheme or device a material fact or making any materially false, fictitious or fraudulent statements in connection with the delivery of, or payment for, healthcare benefits, items or services relating to healthcare matters. Additionally, the ACA amended the intent requirement of some of these criminal statutes under HIPAA so that a person or entity no longer needs to have actual knowledge of the statute, or the specific intent to violate it, to have committed a violation.

Additionally, the federal Open Payments program pursuant to the Physician Payments Sunshine Act, created under Section 6002 of the ACA and its implementing regulations, requires certain manufacturers of drugs, devices, biologicals and medical supplies for which payment is available under Medicare, Medicaid or the Children’s Health Insurance Program (with specified exceptions) to report annually information related to specified payments or other transfers of value provided to physicians, as defined by such law, and teaching hospitals, or to entities or individuals at the request of, or designated on behalf of, the physicians and teaching hospitals and to report annually specified ownership and investment interests held by physicians and their immediate family members. Failure to submit timely, accurately and completely the required information for all payments, transfers of value and ownership or investment interests may result in civil monetary penalties.

In addition, we may be subject to data privacy and security regulation by both the federal government and the states in which we conduct our business. HIPAA, as amended by the Health Information Technology for

[Table of Contents](#)

Economic and Clinical Health Act, or HITECH, and their implementing regulations, impose requirements relating to the privacy, security and transmission of individually identifiable health information held by covered entities and their business associates. Among other things, HITECH makes HIPAA's security standards directly applicable to business associates, defined as independent contractors or agents of covered entities 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 created new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions.

Many states have also adopted laws similar to each of the above federal laws, which may be broader in scope and apply to items or services reimbursed by any third-party payor, including commercial insurers. We may also be subject to 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/or state laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures and pricing information, state and local laws that require the registration of pharmaceutical sales representatives, and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

Ensuring that our internal operations and business arrangements with third parties comply with applicable healthcare laws and regulations will likely be costly. It is possible that governmental authorities will conclude that our business practices do not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations were found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, possible exclusion from government funded healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, additional reporting obligations and oversight if we become subject to a corporate integrity agreement or other agreement to resolve allegations of non-compliance with these laws, and curtailment of our operations, any of which could substantially disrupt our operations. If the physicians or other providers or entities with whom we expect to do business are found not to be in compliance with applicable laws, they may be subject to significant criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

Coverage and Reimbursement

Our ability to commercialize any products successfully will also depend in part on the extent to which coverage and adequate reimbursement for the procedures utilizing our product candidates, performed by health care providers, once approved, will be available from government health administration authorities, private health insurers and other organizations. Government authorities and other third-party payors, such as private health insurers and health maintenance organizations, determine which procedures, and the products utilized in such procedures, they will cover and establish reimbursement levels. Assuming coverage is obtained for procedures utilizing a given product by a third-party payor, the resulting reimbursement payment rates may not be adequate or may require co-payments that patients find unacceptably high. Patients who undergo procedures for the treatment of their conditions, and their treating physicians, generally rely on third-party payors to reimburse all or part of the costs associated with the procedures which utilize our products. Treating physicians are unlikely to use and order our products unless coverage is provided and the reimbursement is adequate to cover all or a significant portion of the cost of the procedures which utilize our products. Therefore, coverage and adequate reimbursement for procedures which utilize new products is critical to the acceptance of such new products. Coverage decisions may depend upon clinical and economic standards that disfavor new products when more established or lower cost therapeutic alternatives are already available or subsequently become available.

[Table of Contents](#)

Government authorities and other third-party payors are developing increasingly sophisticated methods of cost containment, such as including price controls, restrictions on coverage and reimbursement and requirements for substitution of less expensive products and procedures. Government and other third-party payors are increasingly challenging the prices charged for health care products and procedures, examining the cost effectiveness of procedures, and the products used in such procedures, in addition to their safety and efficacy, and limiting or attempting to limit both coverage and the level of reimbursement. Further, no uniform policy requirement for coverage and reimbursement exists among third-party payors in the United States, which causes significant uncertainty related to the insurance coverage and reimbursement of newly approved products, and the procedures which may utilize such newly approved products. Therefore, coverage and reimbursement can differ significantly from payor to payor and health care provider to health care provider. As a result, the coverage determination process is often a time-consuming and costly process that requires the provision of scientific and clinical support for the use of new products to each payor separately, with no assurance that coverage and adequate reimbursement will be applied consistently or obtained in the first instance.

There may be significant delays in obtaining coverage and reimbursement for newly approved products, and coverage may be more limited than the purposes for which the product is approved by the FDA. Moreover, eligibility for coverage and reimbursement does not imply that a product, or the procedures which utilize such product, will be paid for in all cases or at a rate which the health care providers who purchase those products will find cost effective. Additionally, we expect pricing pressures in connection with the sale of any of our product candidates due to the trend toward managed healthcare, the increasing influence of health maintenance organizations, and additional legislative changes.

We cannot be sure that coverage and reimbursement will be available for any product that we commercialize, or the procedures which utilize such product, and, if reimbursement is available, what the level of reimbursement will be. Coverage and reimbursement may impact the demand for, or the price of, any product candidate for which we obtain marketing approval. If coverage and reimbursement are not available or reimbursement is available only to limited levels, we may not successfully commercialize any product candidate for which we obtain marketing approval.

Healthcare Reform Measures

The United States and some foreign jurisdictions are considering or have enacted a number of legislative and regulatory proposals designed to change the healthcare system. 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 the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives.

For example, the pharmaceutical industry in the United States has been affected by the passage of ACA, which, among other things: imposed new fees on entities that manufacture or import certain branded prescription drugs; expanded pharmaceutical manufacturer obligations to provide discounts and rebates to certain government programs; implemented a licensure framework for follow-on biologic products; expanded health care fraud and abuse laws; revised the methodology by which rebates owed by manufacturers to the state and federal government under the Medicaid Drug Rebate Program are calculated for certain drugs and biologics, including products that are inhaled, infused, instilled, implanted or injected; imposed an additional rebate similar to an inflation penalty on new formulations of drugs; extended the Medicaid Drug Rebate Program to utilization of prescriptions of individuals enrolled in Medicaid managed care organizations; expanded the 340B program which caps the price at which manufacturers can sell covered outpatient pharmaceuticals to specified hospitals, clinics and community health centers; and provided incentives to programs that increase the federal government's comparative effectiveness research.

There remain judicial and Congressional challenges to certain aspects of the ACA, as well as efforts by the Trump administration to repeal or replace certain aspects of the ACA. Since January 2017, President Trump has

[Table of Contents](#)

signed Executive Orders and other directives designed to delay the implementation of certain provisions of the ACA or otherwise circumvent some of the requirements for health insurance mandated by the ACA. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed comprehensive repeal legislation, several bills affecting the implementation of certain taxes under the ACA have been signed into law. The Tax Cuts and Jobs Act of 2017, or Tax Act, included a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the “individual mandate”. Additionally, the 2020 federal spending package permanently eliminated, effective January 1, 2020, the ACA-mandated “Cadillac” tax on high-cost employer-sponsored health coverage and medical device tax and, effective January 1, 2021, also eliminates the health insurer tax. Further, the Bipartisan Budget Act of 2018, or the BBA, among other things, amended the ACA, effective January 1, 2019, to increase from 50 percent to 70 percent the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D and to close the coverage gap in most Medicare drug plans, commonly referred to as the “donut hole”. On December 14, 2018, a Texas U.S. District Court Judge ruled that the ACA is unconstitutional in its entirety because the “individual mandate” was repealed by Congress as part of the Tax Act. On December 18, 2019, the U.S. Court of Appeals for the 5th Circuit upheld the District Court ruling that the individual mandate was unconstitutional and remanded the case back to the District Court to determine whether the remaining provisions of the ACA are invalid as well. On March 2, 2020, the United States Supreme Court granted the petitions for writs of certiorari to review this case, and has allotted one hour for oral arguments, which are expected to occur in the fall. It is unclear how such litigation and other efforts to repeal and replace the ACA will impact the ACA.

Other legislative changes have been proposed and adopted in the United States since the ACA was enacted. In August 2011, the Budget Control Act of 2011, among other things, included aggregate reductions of Medicare payments to providers of 2.0% per fiscal year, which went into effect in April 2013, and due to subsequent legislative amendments, including the BBA, will remain in effect through 2030, unless additional U.S. Congressional action is taken. These Medicare sequester reductions will be suspended from May 1, 2020 through December 31, 2020 due to the COVID-19 pandemic. In addition, in January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, reduced Medicare payments to several categories of healthcare providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. Additionally, the Medicare Access and CHIP Reauthorization Act of 2015, or MACRA, ended the use of the statutory formula for clinician payment and established a quality payment incentive program, also referred to as the Quality Payment Program. This program provides clinicians with two ways to participate, including through the Advanced Alternative Payment Models, or APMs, and the Merit-based Incentive Payment System, or MIPS. In November 2019, CMS issued a final rule finalizing the changes to the Quality Payment Program. At this time, it is unclear how the introduction of the Quality Payment Program will impact overall physician reimbursement under the Medicare program. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors.

In addition, there has been particular and increasing legislative and enforcement interest in the United States with respect to drug pricing practices in recent years, particularly with respect to drugs that have been subject to relatively large price increases over relatively short time periods. Specifically, there have been several recent U.S. Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, reduce the cost of prescription drugs under Medicare and reform government program reimbursement methodologies for pharmaceutical products. The Trump administration’s budget proposal for fiscal year 2021 includes a \$135 billion allowance to support legislative proposals seeking to reduce drug prices, increase competition, lower out-of-pocket drug costs for patients, and increase patient access to lower-cost generic and biosimilar drugs. On March 10, 2020, the Trump administration sent “principles” for drug pricing to Congress, calling for legislation that would, among other things, cap Medicare Part D beneficiary out-of-pocket pharmacy expenses, provide an option to cap Medicare Part D beneficiary monthly out-of-pocket expenses, and

[Table of Contents](#)

place limits on pharmaceutical price increases. Further, the Trump administration previously released a “Blueprint” to lower drug prices and reduce out of pocket costs of drugs that contained proposals to increase drug manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products, and reduce the out of pocket costs of drug products paid by consumers. HHS has solicited feedback on some of these measures and has implemented others under its existing authority. For example, in May 2019, CMS 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 CMS’s policy change that was effective January 1, 2019. Although a number of these and other measures may require additional authorization to become effective, Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. In addition, individual states in the United States have become increasingly active in passing legislation and implementing 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 the future, there will likely continue to be proposals relating to the reform of the U.S. healthcare system, some of which could further limit coverage and reimbursement of products.

The Foreign Corrupt Practices Act

The Foreign Corrupt Practices Act, or FCPA, prohibits any U.S. individual or business from paying, offering or authorizing payment or offering of anything of value, directly or indirectly, to any foreign official, political party or candidate for the purpose of influencing any act or decision of the foreign entity in order to assist the individual or business in obtaining or retaining business. The FCPA also obligates companies whose securities are listed in the United States to comply with accounting provisions requiring the companies to maintain books and records that accurately and fairly reflect all transactions of the companies, including international subsidiaries, and to devise and maintain an adequate system of internal accounting controls for international operations.

Employees

As of March 31, 2020, we had 64 full-time employees, including 29 who hold an M.D. or Ph.D. degree. Of these full-time employees, 53 were primarily engaged in research and development activities and 11 were primarily engaged in management or general and administrative activities. None of our employees is represented by a labor union and we consider our employee relations to be good.

Facilities

Our headquarters is currently located in Montréal, Québec, Canada and consists of 9,045 square feet of leased laboratory and office space under a lease that expires in July 2021. We also have a U.S. subsidiary in Cambridge, Massachusetts. In November 2019, we entered into a new five-year lease agreement for 17,123 square feet of office and laboratory space in Montréal, Québec, Canada. Such lease has not yet commenced and we intend to move into the space prior to the end of 2020.

Legal Proceedings

From time to time, we may become involved in legal proceedings arising in the ordinary course of our business. We are not currently a party to any material legal proceedings, and we are not aware of any pending or threatened legal proceeding against us that we believe could have an adverse effect on our business, operating results or financial condition.

MANAGEMENT

The following table sets forth information regarding our executive officers and directors, including their ages as of May 15, 2020.

<u>Name</u>	<u>Age</u>	<u>Position(s)</u>
Executive Officers		
Lloyd M. Segal	56	President, Chief Executive Officer and Director
Steve Forte	41	Executive Vice President, Chief Financial Officer
Maria Koehler, M.D., Ph.D.	63	Executive Vice President, Chief Medical Officer
Michael Zinda, Ph.D.	49	Executive Vice President, Chief Scientific Officer
Non-Employee Directors		
Jerel Davis, Ph.D.(2)(3)	43	Chairman of the Board of Directors
David Bonita, M.D.(3)	44	Director
Todd Foley(1)	48	Director
Samarth Kulkarni, Ph.D.(2)	41	Director
Briggs Morrison, M.D.(2)	61	Director
Kevin J. Raidy(4)	51	Director
Ann D. Rhoads(1)	55	Director
Carol A. Schafer(1)(3)	56	Director

(1) Member of audit committee.

(2) Member of compensation committee.

(3) Member of nominating and corporate governance committee.

(4) Mr. Raidy intends to resign from our board of directors prior to the effectiveness of the registration statement of which this prospectus forms a part.

Executive Officers

Lloyd M. Segal has served as our President and Chief Executive Officer and as a member of our board of directors since our incorporation in September 2016. From February 2010 to January 2016, he was a Managing Partner with Persistence Capital Partners, a Canadian-based healthcare private equity investor. Previously, Mr. Segal was a consultant with McKinsey & Company, and served as chief executive officer of several emerging biotechnology companies including Advanced Bioconcept Inc., Caprion Pharmaceuticals Inc. (now Caprion Biosciences), which he co-founded, and Thallion Pharmaceuticals Inc. He serves as a member of the board of directors of GBC American Fund, a U.S. growth-focused mutual fund. Mr. Segal also previously served as Chairman of LMC Diabetes & Endocrinology, Canada's leading national endocrinology practice. From June 2016 to March 2020, Mr. Segal served as Entrepreneur-in-Residence with Versant Ventures. He was honored in 2013 by the *Financial Times* as Outstanding Director of the Year for public companies and also previously served on the boards of directors of several public and private U.S. and Canadian companies, including Valeant Pharmaceuticals International and its predecessor company, Biovail Corporation. He holds a B.A. in politics from Brandeis University and an M.B.A. from Harvard Business School. Our board of directors believes that Mr. Segal's extensive experience in the biotechnology industry in addition to his corporate governance and executive leadership experience qualify him to serve on our board of directors.

Steve Forte has served as our Executive Vice President, Chief Financial Officer since October 2019. Prior to joining us, he served as Chief Financial Officer of Clementia Pharmaceuticals Inc. from August 2018 through June 2019, during which time Clementia was acquired by Ipsen S.A. From September 2015 to August 2018, Mr. Forte served as Chief Financial Officer of Thinking Capital Financial Corporation, a Canadian financial

[Table of Contents](#)

technology firm, where he ultimately led the firm through a sale to Purpose Investments. From September 2014 to September 2015, he served as Executive Director of Finance of CST Canada Co. From 2005 to 2014, Mr. Forte held positions of increasing responsibility at Aptalis Pharma Inc., including most recently holding the position of Vice President, Financial Reporting where he was responsible for the overall corporate controllership function of the company. He currently serves on the board of directors of Profound Medical Corp., where he is also a member of the audit committee. Mr. Forte received his Bachelor of Commerce in accountancy from Concordia University and is a Certified Professional Accountant in the Province of Québec and a Certified Information Systems Auditor (non-practicing) with ISACA.

Maria Koehler, M.D., Ph.D. has served as our Executive Vice President, Chief Medical Officer since May 2019. Prior to joining us, from September 2017 to April 2019, Dr. Koehler served as the Chief Medical Officer of Bicycle Therapeutics Limited. From March 2009 to September 2017, Dr. Koehler served as Vice President of Strategy, Innovation and Collaborations for the Oncology Business Unit at Pfizer Inc. Prior to joining Pfizer, Dr. Koehler was the group leader for the Medicine Development Center of GlaxoSmithKline Oncology. Prior to that, Dr. Koehler was a Senior Medical Director for oncology research and development at AstraZeneca plc. Dr. Koehler has also served as the clinical director of Bone Marrow Transplantation at University Hospital in Pittsburgh as well as the director of the Bone Marrow Transplant Program and associate professor at St. Christopher's Hospital in Philadelphia. Dr. Koehler is a board-certified hematology/oncology physician. Dr. Koehler received her M.D. and Ph.D. from Silesian School of Medicine in Katowice, Poland.

Michael Zinda, Ph.D. has served as our Executive Vice President, Chief Scientific Officer since May 2019 and previously served as Executive Vice President, Head of Research and Development of our U.S. subsidiary, Repare Therapeutics USA Inc., from June 2017 to May 2019. Prior to joining us, he spent 16 years at AstraZeneca from 2001 to May 2017, where he obtained the position of Executive Director, Head of Cancer Bioscience. In this role, Dr. Zinda served on the global science leadership team, oncology research board and the Acerta research and early development teams accountable for strategy, key collaborations/partnerships and delivery of an innovative portfolio of patient-centric drug discovery programs. Dr. Zinda holds a B.Sc. in biology from Minnesota State University Moorhead and a Ph.D. in molecular biology from Vanderbilt University. He received his post-doctoral training at Princeton University and Eli Lilly & Company.

Non-Employee Directors

Jerel Davis, Ph.D. has served as chairman of our board of directors since our incorporation in September 2016. Since June 2011, Dr. Davis has been at Versant Venture Management, LLC, a healthcare investment firm, where he has held the position of managing director since 2015. He has played a critical role in Versant's company creation strategies and has served on the boards of directors of many public and private biotech companies including BlueRock Therapeutics, Turnstone Biologics, Chinook Therapeutics, Inception 5 and Northern Biologics. Prior to joining Versant, Dr. Davis was an associate principal at McKinsey & Company in various healthcare markets including the United States, Canada, Europe and China. He received a B.S. in mathematics and biology from Pepperdine University and a Ph.D. in population genetics from Stanford University. Our board of directors believes that Dr. Davis's broad and extensive experience in the life sciences industry as both an investor of and launching numerous life sciences companies qualifies him to serve on our board of directors.

David Bonita, M.D. has served as a member of our board of directors since September 2019. Dr. Bonita is a member of OrbiMed Advisors LLC, an investment firm, where he has held various positions since joining in June 2004. He currently serves on the boards of directors of Tricida, Inc. and Imara Inc. Dr. Bonita previously served on the boards of directors of several other public and private companies, including Ambit Biosciences Corporation, Clementia Pharmaceuticals Inc., Loxo Oncology, Inc., SI-BONE, Inc. and ViewRay Inc. Prior to joining OrbiMed, he worked as a corporate finance analyst in the healthcare investment banking groups of Morgan Stanley and UBS. Dr. Bonita has published scientific articles in peer-reviewed journals based on signal transduction research performed at Harvard Medical School. He received his B.A. in biology from Harvard

[Table of Contents](#)

University and his joint M.D./M.B.A. from Columbia University. Our board of directors believes that Dr. Bonita's extensive investment experience in the healthcare industry and his experience on the boards of directors of several public and private companies qualify him to serve on our board of directors.

Todd Foley has served as a member of our board of directors since June 2017. Since 1999, Mr. Foley has worked at MPM Capital LLC, a healthcare-focused venture capital firm, where he currently serves as a Managing Director focusing on investments in biotech companies. He currently serves on the board of directors of Chiasma, Inc. and Rhythm Pharmaceuticals, Inc. and also serves as on the boards of directors of several other privately-held life sciences and pharmaceutical companies. Mr. Foley received a B.S. in chemistry from the Massachusetts Institute of Technology and an M.B.A. from Harvard Business School. Our board of directors believes that Mr. Foley's financial expertise and experience as both an investor of and a member of the board of directors of numerous life sciences companies qualify him to serve on our board of directors.

Samarth Kulkarni, Ph.D. has served as a member of our board of directors since November 2019. Dr. Kulkarni is the Chief Executive Officer of CRISPR Therapeutics AG, a position he has held since 2017. He initially joined CRISPR in August 2015 as Chief Business Officer, and then served as CRISPR's President and Chief Business Officer from May 2017 to November 2017. Prior to joining CRISPR, Dr. Kulkarni was a partner within the pharmaceuticals and biotechnology practice at McKinsey & Company, a global consulting firm, where he held various positions of increasing responsibility after joining in 2006. He also serves on the board of directors of Black Diamond Therapeutics, Inc. Dr. Kulkarni received a Ph.D. in bioengineering and nanotechnology from the University of Washington and a B. Tech. from the Indian Institute of Technology. Our board of directors believes that Dr. Kulkarni's extensive management and industry experience qualify him to serve on our board of directors.

Briggs Morrison, M.D. has served as a member of our board of directors since June 2017. Dr. Morrison currently serves as the Chief Executive Officer of Syndax Pharmaceuticals, Inc., a position he has held since June 2015, and as a member of its board of directors since July 2015. Prior to joining Syndax, Dr. Morrison served as Executive Vice President, Global Medicines Development and Chief Medical Officer at AstraZeneca plc from January 2012 to June 2015, leading the company's global, late-stage development organization and serving as a member of the AstraZeneca senior executive team. From October 2007 to December 2011, Dr. Morrison held a number of positions of increasing responsibility at Pfizer Inc., culminating in his appointment as Head, Medical Affairs, Safety and Regulatory Affairs for Pfizer's human health business. Dr. Morrison served as chairman of the board of TransCelerate BioPharma Inc. from 2014 to 2015, a member of the executive committee of the Clinical Trials Transformation Initiative sponsored by FDA, and is on the board of the Alliance for Clinical Research Excellence and Safety. In addition to Syndax, Dr. Morrison currently serves on the boards of directors of two other public companies, Arvinas, Inc. and NextCure, Inc. as well as on the boards of directors of several private companies. He is also currently an executive partner at MPM Capital LLC, a healthcare-focused venture capital firm, a position he has held since June 2015. Dr. Morrison received a B.S. in biology from Georgetown University and an M.D. from the University of Connecticut Medical School. He completed residency training in internal medicine at Massachusetts General Hospital and a fellowship in medical oncology at the Dana-Farber Cancer Institute. Our board of directors believes that Dr. Morrison's extensive executive leadership experience, his medical background and training and his service on the boards of other public and private biopharmaceutical and biotechnology companies qualify him to serve on our board of directors.

Kevin J. Raidy has served as a member of our board of directors since September 2019. Since November 2017, Mr. Raidy has served as Managing Partner and Portfolio Manager of Cowen Healthcare Investments. Previously, from 2012 to 2017, he served as Head of Investment Banking at Cowen and Company, and from 2010 to 2012, he served as the co-head of Cowen's equity capital markets group, which is responsible for the origination and execution of all equity capital-raising transactions. Prior joining Cowen, Mr. Raidy was a managing director at Ramius LLC, where he was portfolio manager for direct investments and convertible bonds, managing a portfolio in excess of \$1 billion. Mr. Raidy also was the founder of H4 Capital Management LLC. His sell-side experience includes ten years at Shipley Raidy Capital Partners LP, a boutique investment banking

[Table of Contents](#)

firm that he co-founded, where he was responsible for sourcing, evaluating and structuring numerous debt and equity financings and also performed M&A advisory services. Mr. Raidy holds a B.S. in economics with a concentration in finance from the Wharton School of the University of Pennsylvania. Our board of directors believes that Mr. Raidy's extensive financial and investment expertise qualify him to serve on our board of directors. Mr. Raidy intends to resign from our board of directors prior to the effectiveness of the registration statement of which this prospectus forms a part.

Ann D. Rhoads has served as a member of our board of directors since June 10, 2020. Ms. Rhoads most recently served as Chief Financial Officer of Forty Seven, Inc. (acquired by Gilead Sciences, Inc.), a position she held from March 2018 until its sale to Gilead in 2020. Previously, from 2010 to January 2017, Ms. Rhoads was Executive Vice President and Chief Financial Officer of Zogenix, Inc. From 1998 through 2009, Ms. Rhoads was at Premier, Inc., serving as Vice President, Strategic Initiatives from 1998 to 2000 before serving as Chief Financial Officer from 2000 through the 2009. Ms. Rhoads currently serves on the board of directors of Globus Medical Inc. and Evoke Pharma, Inc., and she previously served on the board of directors of Iridex Corporation and Novellus Systems, Inc. Ms. Rhoads holds a B.S. in Finance from the University of Arkansas and an M.B.A. from the Harvard Graduate Business School. Our board of directors believes that Ms. Rhoads' extensive experience as a chief financial officer of multiple publicly traded biotech and pharmaceutical companies, in addition to her experience as a member of the boards of directors of multiple publicly traded biotech and pharmaceutical companies, qualify her to serve on our board of directors.

Carol A. Schafer has served as a member of our board of directors since March 2019. Ms. Schafer is currently a consultant in the biotech industry and has more than 25 years of experience in investment banking, equity capital markets, corporate finance and business development in the biopharmaceutical sector. From April 2007 to September 2018, she held various positions of increasing responsibility at Wells Fargo Securities, most recently serving as Vice Chair, Equity Capital Markets. From December 2003 to February 2007, Ms. Schafer served as Vice President of Finance and Business Development at Lexicon Pharmaceuticals. Prior to that, Ms. Schafer worked at J.P. Morgan, where she held positions of increasing responsibility, most recently serving as a managing director in equity capital markets. Ms. Schafer currently serves on the boards of directors of Idera Pharmaceuticals, Inc., Five Prime Therapeutics, Inc. and Insmid Incorporated. Ms. Schafer received a B.A. from Boston College and an M.B.A from New York University. Our board of directors believes that Ms. Schafer's extensive financial background and experience providing investment banking, equity capital markets and strategic support to companies within the healthcare sector qualify her to serve on our board of directors.

Board Composition

Our board of directors will be composed of seven members upon the closing of this offering. All of our directors currently serve on the board of directors pursuant to the provisions of our second amended and restated unanimous shareholders' agreement, or the shareholders' agreement, dated September 3, 2019, between us and all of our shareholders. The shareholders' agreement will terminate upon the closing of this offering, after which there will be no further contractual obligations regarding the election of our directors.

Our board of directors will be divided into three classes, Class I, Class II and Class III, with members of each class serving staggered terms. Effective upon the closing of this offering, our board of directors will be divided into the following classes:

- Class I, which will consist of Dr. Davis, Mr. Foley and Ms. Rhoads, whose terms will expire at the close of our first annual meeting of shareholders to be held after the closing of this offering;
- Class II, which will consist of Dr. Bonita and Ms. Schafer, whose terms will expire at our second annual meeting of shareholders to be held after the closing of this offering; and
- Class III, which will consist of Dr. Kulkarni, Dr. Morrison and Mr. Segal, whose terms will expire at our third annual meeting of shareholders to be held after the closing of this offering.

[Table of Contents](#)

We expect that any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors. The division of our board of directors into three classes with staggered three-year terms may delay or prevent a change of our management or a change in control.

Our articles of continuance that will become effective immediately prior to the closing of this offering will provide that our board of directors is to consist of a minimum of three and a maximum of fifteen directors as determined from time to time by the directors. Under the QBCA, between annual general meetings of our shareholders, the directors may appoint one or more additional directors, but the number of additional directors may not at any time exceed one third of the number of directors elected at the previous annual meeting of shareholders.

Director Independence

Under listing rules of the Nasdaq Stock Market LLC, or the Nasdaq Listing Rules, independent directors must comprise a majority of our board of directors within one year of listing as a public company.

Our board of directors has undertaken a review of its composition, the composition of its committees and the independence of each director. Based upon information requested from and provided by each director concerning his or her background, employment and affiliations, including family relationships, our board of directors has determined that all of our directors except Mr. Segal, representing seven of our eight directors to hold office upon the closing of this offering, do not have any relationships that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is “independent” as that term is defined under the applicable rules and regulations of the SEC and the Nasdaq Listing Rules. 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 share capital by each non-employee director.

There are no family relationships among our directors and executive officers.

Role of the Board in Risk Oversight

One of the key functions of our board of directors is informed oversight of our risk management process. Our board of directors does not have a standing risk management committee, but rather administers this oversight function directly through the board of directors as a whole, as well as through various standing committees of our board of directors that address risks inherent in their respective areas of oversight. In particular, our board of directors is responsible for monitoring and assessing strategic risk exposure and our audit committee has the responsibility to consider and discuss our major financial risk exposures and the steps our management has taken to monitor and control these exposures, including guidelines and policies to govern the process by which risk assessment and management is undertaken. The audit committee also monitors compliance with legal and regulatory requirements.

Board Committees

Our board of directors has established an audit committee and a compensation committee, each of which will be reconstituted prior to the completion of this offering. We will also establish a nominating and corporate governance committee prior to the completion of this offering. The composition and functions of each committee are described below. Members serve on these committees until their resignation or until otherwise determined by our board of directors.

Audit Committee

Upon the completion of this offering, our audit committee will consist of Mr. Foley, Ms. Rhoads and Ms. Schafer. The chair of our audit committee is Ms. Rhoads. Our board of directors has determined that all members are independent under the Nasdaq Listing Rules and Rule 10A-3(b)(1) of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Our board of directors has determined that each member of our audit committee meets the financial literacy requirements as set forth in the Nasdaq Listing Rules. Our board of directors has also determined that each of Ms. Rhoads and Ms. Schafer is an “audit committee financial expert” as such term is currently defined in Item 407(d)(5) of Regulations S-K. In arriving at these determinations, the board of directors has examined each audit committee member’s scope of experience and the nature of their employment in the corporate finance sector.

The audit committee is responsible for assisting our board of directors in its oversight of the integrity of our consolidated financial statements, the qualifications and independence of our independent auditors and our internal financial and accounting controls. The principal duties and responsibilities of our audit committee include, among other things:

- selecting a qualified firm to serve as the independent registered public accounting firm to audit our financial statements;
- helping to ensure the independence and performance of the independent registered public accounting firm;
- discussing the scope and results of the audit with the independent registered public accounting firm, and reviewing, with management and the independent accountants, our interim and year-end operating results;
- developing procedures for employees to submit concerns anonymously about questionable accounting or audit matters;
- reviewing our policies on risk assessment and risk management;
- reviewing related party transactions;
- reviewing with our independent auditors and management significant issues that arise regarding accounting principles and financial statement presentation and matters concerning the scope, adequacy and effectiveness of our financial controls; and
- approving (or, as permitted, pre-approving) all audit and all permissible non-audit services, other than de minimis non-audit services, to be performed by the independent registered public accounting firm.

Our audit committee will operate under a written charter, to be effective immediately prior to the closing of this offering, which satisfies the applicable rules and regulations of the SEC and the Nasdaq Listing Rules.

Compensation Committee

Upon the completion of this offering, our compensation committee will consist of Dr. Bonita, Dr. Kulkarni and Dr. Morrison. The chair of our compensation committee is Dr. Morrison. Our board of directors has determined that all members are independent under the Nasdaq Listing Rules and are “non-employee directors” as defined in Rule 16b-3 promulgated under the Exchange Act.

The compensation committee oversees the compensation objectives for the company and the compensation of the chief executive officer and other executives. The principal duties and responsibilities of our compensation committee include, among other things:

- reviewing and recommending to our board of directors the compensation of our executive officers, including evaluating the performance of our chief executive officer and, with his assistance, that of our other executive officers;

Table of Contents

- reviewing and recommending to our board of directors the compensation of our directors;
- reviewing and approving, or recommending that our board of directors approve, the terms of compensatory arrangements with our executive officers;
- administering our equity and non-equity incentive plans;
- reviewing and approving, or recommending that our board of directors approve, incentive compensation and equity plans; and
- reviewing and establishing general policies relating to compensation and benefits of our employees and reviewing our overall compensation philosophy.

Our compensation committee will operate under a written charter, to be effective immediately prior to the closing of this offering, which satisfies the applicable rules and regulations of the SEC and Nasdaq Listing Rules.

Nominating and Corporate Governance Committee

Upon the completion of this offering, our nominating and corporate governance committee will consist of Dr. Davis, Mr. Foley and Ms. Schafer. The chair of our nominating and corporate governance committee is Ms. Schafer. Each member of the nominating and corporate governance committee is a non-employee director within the meaning of Rule 16b-3 of the rules promulgated under the Exchange Act, an independent director as defined by the Nasdaq Listing Rules and is free from any relationship that would interfere with the exercise of his or her independent judgment, as determined by the board of directors in accordance with the applicable Nasdaq Listing Rules.

The nominating and corporate governance committee oversees our corporate governance policies and evaluates the composition of our board of directors and candidates for director. The nominating and corporate governance committee's responsibilities include, among other things:

- identifying, evaluating and selecting, or recommending that our board of directors approve, nominees for election to our board of directors and its committees;
- evaluating the performance of our board of directors and of individual directors;
- considering and making recommendations to our board of directors regarding the composition of our board of directors and its committees;
- reviewing developments in corporate governance practices;
- evaluating the adequacy of our corporate governance practices and reporting;
- developing and making recommendations to our board of directors regarding corporate governance guidelines and matters; and
- overseeing an annual evaluation of the board's performance.

Our nominating and governance committee will operate under a written charter, to be effective immediately prior to the closing of this offering, which satisfies the applicable rules and regulations of the SEC and the Nasdaq Listing Rules.

Code of Business Conduct and Ethics

In connection with this offering, we have adopted a Code of Business Conduct and Ethics, or the Code of Ethics, applicable to all of our employees, executive officers and directors. Following the closing of this offering, the Code of Ethics will be available on our website at www.reparerx.com. The nominating and corporate governance committee will be responsible for overseeing the Code of Ethics and must approve any waivers of the

[Table of Contents](#)

Code of Ethics for our employees, executive officers and directors. We expect that any amendments to the Code of Ethics, or any waivers of its requirements, will be disclosed on our website. Information contained in, or accessible through, our website does not constitute a part of, and is not incorporated into, this prospectus.

In accordance with the QBCA, directors and officers must disclose the nature and value of any interest he or she has in a contract or transaction, whether made or proposed (including related negotiations), to which we are a party. Such “interest” means any financial stake in a contract or transaction that may reasonably be considered likely to influence decision-making. Such disclosure is also required for any contract of transaction to which we are a party and (i) an associate of the director or officer; (ii) a group of which the director or officer is a director or officer; or (iii) a group in which the director or officer or an associate of the director or officer has an interest, whether or not such contract or transaction requires approval by our board of directors. Subject to certain limited exceptions under the QBCA, no director may vote on, any resolution to approve, amend or terminate a contract or transaction which is subject to such disclosure requirement.

Compensation Committee Interlocks and Insider Participation

None of the members of the compensation committee is currently, or has been at any time, one of our executive officers or employees. None of our executive officers currently serves, or has served during the last year, as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving as a member of our board of directors or on our compensation committee.

Non-Employee Director Compensation

Historically, we have not had a formal compensation policy with respect to service on our board of directors. We have reimbursed and will continue to reimburse our non-employee directors for their reasonable out-of-pocket expenses incurred in attending board and committee meetings, and occasionally granted share options as compensation for service. Our board of directors will adopt a formal director compensation policy for non-employee directors to be effective following the completion of this offering.

Non-Employee Director Compensation Policy

In June 2020, following market research and advice from its compensation consultant, our board of directors adopted the non-employee director compensation policy, to be effective immediately upon the closing of this offering.

Under this policy, we will pay each of our non-employee directors a cash retainer for service on our board of directors and committees of our board of directors. Our non-executive chairperson will also receive an additional cash retainer. These retainers will be payable in arrears in four equal quarterly installments within thirty days after the end of each calendar quarter, provided that the amount of such payment will be prorated for any portion of such quarter that the director is not serving on our board. We will also reimburse our directors for their reasonable out-of-pocket expenses in connection with attending our board and committee meetings.

Directors will be eligible to receive cash compensation as follows:

	Annual Cash Retainer (\$)
Annual retainer	35,000
Additional retainer for non-executive chairperson	30,000
Additional retainer for audit committee chair	15,000
Additional retainer for audit committee member	7,500
Additional retainer for compensation committee chair	10,000
Additional retainer for compensation committee member	5,000
Additional retainer for nominating and governance committee chair	8,000
Additional retainer for nominating and governance committee member	4,000

[Table of Contents](#)

Equity Compensation

In addition to cash compensation, each non-employee director will be eligible to receive options under the 2020 Plan. Each option granted under the policy will be a nonstatutory stock option and will have an exercise price per share equal to the fair market value of a common share on the date of grant. Any options granted under this policy will have a term of ten years from the date of grant, subject to earlier termination in connection with a termination of the eligible director's continuous service with us. Vesting schedules for equity awards will be subject to the non-employee director's continuous service on each applicable vesting date.

Upon the termination of the membership of the non-employee director on the board for any reason, his or her options granted under this policy shall remain exercisable for three months following his or her date of termination (or such longer period as the board may determine in its discretion on or after the date of grant of such options).

Notwithstanding any vesting schedule, for each non-employee director who remains in continuous service with us until immediately prior to the closing of a change in control (as such term is defined in our 2020 Plan), the shares subject to his or her then-outstanding initial or annual equity awards that were granted pursuant to this policy will become fully vested immediately prior to the closing of such change in control.

Initial Award

Each new non-employee director who first joins our board of directors after the date of the execution of the underwriting agreement related to this offering will automatically, upon the date of his or her initial election or appointment to be a non-employee director, be granted an initial, one-time equity award of options to purchase 38,907 common shares, referred to as the initial grant. One-third of each initial grant will vest on the first anniversary of the date of grant, with the remainder vesting in equal monthly installments thereafter until the third anniversary of the date of grant.

Annual Awards

On the date of each annual meeting of our shareholders following the closing of this offering, each non-employee director that continues to serve will automatically be granted either an option to purchase 14,120 common shares, each of which will vest in equal monthly installments over the 12 months following the date of grant, subject to (i) the non-employee director's continuous service through each applicable vesting date and (ii) that no annual award will be granted to a non-employee director in the same calendar year that such director received his or her initial grant.

[Table of Contents](#)

Director Compensation Table

The following table sets forth information regarding the compensation earned for service on our board of directors by our non-employee directors and for their service as a consultant to us, if applicable, during the year ended December 31, 2019. Mr. Segal is also member of our board of directors, but did not receive any additional compensation for his service as a director and therefore is not included in the table below. The compensation for Mr. Segal is set forth under “Executive Compensation—Summary Compensation Table.”

<u>Name</u>	<u>Fees Earned or Paid in Cash (\$)</u>	<u>Option Awards \$(1)(2)</u>	<u>Total (\$)</u>
David Bonita	—	—	—
Jerel Davis	—	—	—
Todd Foley	—	—	—
Samarth Kulkarni	7,500	111,800	119,300
Briggs Morrison	50,000	71,200	121,200
Kevin J. Raidy	—	—	—
Carol A. Schafer	25,000	88,800	113,800

- (1) In accordance with SEC rules, this column reflects the aggregate grant date fair value of the option awards granted during fiscal year 2019 computed in accordance with ASC 718. Assumptions used in the calculation of these amounts are included in the notes to our audited consolidated financial statements included elsewhere in this prospectus. These amounts do not reflect the actual economic value that will be realized by our non-employee directors upon the vesting of the share options, the exercise of the share options or the sale of the common shares underlying such share options.
- (2) The following table provides information regarding the number of common shares underlying share options granted to our non-employee directors that were outstanding as of December 31, 2019:

<u>Name</u>	<u>Option Awards Outstanding at Year-End</u>
David Bonita	—
Jerel Davis	—
Todd Foley	—
Samarth Kulkarni	70,933
Briggs Morrison	90,728
Kevin J. Raidy	—
Carol A. Schafer	70,933

Equity Award to A Director Upon the Completion of this Offering

On June 10, 2020, our board of directors approved a grant of 38,907 options to Ms. Rhoads in connection with her appointment to our board of directors. The award will be granted contingent and effective upon the execution of the underwriting agreement for this offering, with an exercise price equal to the initial public offering price per share, and under the 2020 Plan. One-third of the options will vest on the first anniversary of the date of grant, with the remainder vesting in equal monthly installments thereafter until the third anniversary of the date of grant.

EXECUTIVE COMPENSATION

Compensation Overview

The following table shows the total compensation awarded to, earned by, or paid to during the year ended December 31, 2019 to (1) our principal executive officer, (2) our two next most highly compensated executive officers who earned more than \$100,000 during the fiscal year ended December 31, 2019 and were serving as executive officers as of such date, and (3) any individual who would otherwise be included in (2) above but for the fact that such individual was not serving as an executive officer of ours as of December 31, 2019. We refer to these individuals in this prospectus as our named executive officers.

Our named executive officers for 2019 who appear in the Summary Compensation Table are:

- Lloyd M. Segal, our President and Chief Executive Officer;
- Michael Zinda, Ph.D., our Executive Vice President, Chief Scientific Officer;
- Maria Koehler, M.D., Ph.D., our Executive Vice President, Chief Medical Officer; and
- Katina Dorton, our former Executive Vice President, Chief Financial Officer.

Summary Compensation Table

Name and Principal Position	Year	Salary (\$)⁽¹⁾	Option Awards (\$)⁽²⁾	Non-Equity Incentive Plan Compensation (\$)⁽³⁾	All Other Compensation (\$)	Total (\$)
Lloyd M. Segal ⁽⁴⁾ <i>President and Chief Executive Officer</i>	2019	430,000	1,031,000	122,550	1,362 ⁽⁵⁾	1,584,912
Michael Zinda, Ph.D. ⁽⁶⁾ <i>Executive Vice President, Chief Scientific Officer</i>	2019	324,077	403,200	70,000	34,355 ⁽⁷⁾	831,632
Maria Koehler, M.D., Ph.D. ⁽⁸⁾ <i>Executive Vice President, Chief Medical Officer</i>	2019	272,596	363,500	76,146	15,466 ⁽⁹⁾	727,708
Katina Dorton ⁽¹⁰⁾ <i>Former Executive Vice President, Chief Financial Officer</i>	2019	175,000	216,000	–	388,452 ⁽¹¹⁾	779,452

- (1) Salary amounts represent actual amounts paid during 2019. See “—Narrative to the Summary Compensation Table—Annual Base Salary” below.
- (2) In accordance with SEC rules, this column reflects the aggregate grant date fair value of the option awards granted during fiscal year 2019 computed in accordance with ASC 718 for share-based compensation transactions. Assumptions used in the calculation of these amounts are included in Note 11 to our audited consolidated financial statements included elsewhere in this prospectus. These amounts do not reflect the actual economic value that will be realized by the named executive officer upon the vesting of the share options, the exercise of the share options or the sale of the common shares underlying such share options.
- (3) Reflects performance-based cash bonuses awarded to our named executive officers. See “—Non-Equity Incentive Plan Compensation” below for a description of the material terms of the program pursuant to which this compensation was awarded.
- (4) Mr. Segal also serves as a member of our board of directors but does not receive any additional compensation for his service as a director.

Table of Contents

- (5) Includes life insurance premiums in the amount of \$51 paid by us on behalf of Mr. Segal.
- (6) Dr. Zinda was appointed as our Executive Vice President, Chief Scientific Officer in May 2019. His salary was increased from \$285,000 to \$325,000 in connection with his promotion.
- (7) Represents (i) contributions to a retirement account in the amount of \$24,375 and (ii) reimbursements paid with respect to medical insurance premiums for Dr. Zinda in the aggregate amount of \$9,980.
- (8) Dr. Koehler commenced employment with us on May 1, 2019.
- (9) Represents (i) a travel allowance in the amount of \$12,800 and (ii) the employee portion of Dr. Koehler's medical and dental insurance premiums that we pay on her behalf in the amount of \$2,666.
- (10) Ms. Dorton commenced employment with us on April 15, 2019. Ms. Dorton's employment was terminated effective October 10, 2019.
- (11) Represents (i) a housing allowance in the amount of \$26,000, (ii) severance payments totaling \$345,375 (of which \$86,344 was paid as of December 31, 2019 and the remainder will be paid in equal monthly payments through June 2020, pursuant to the terms of her separation agreement), (iii) consulting fees in the amount of \$9,000 pursuant to the terms of her severance agreement and (iv) a cash payment for unused accrued vacation through her separation date in the amount of \$8,077.

Narrative to the Summary Compensation Table

Our board of directors reviews compensation annually for all employees, including our named executive officers. In setting executive base salaries and bonuses and granting equity incentive awards, we consider compensation for comparable positions in the market, the historical compensation levels of our executives, individual performance as compared to our expectations and objectives, our desire to motivate our employees to achieve short- and long-term results that are in the best interests of our shareholders and a long-term commitment to our company.

The board of directors has historically determined the compensation of our executives, upon recommendation of the compensation committee. The compensation committee has reviewed and recommended to the board for approval the compensation and other terms of employment of our chief executive officer, and evaluates the chief executive officer's performance in light of relevant corporate goals and objectives. Our chief executive officer has typically discussed his recommendations for all other executives (other than himself) with the compensation committee and the board. Based on those discussions and its discretion, the compensation committee has recommended the compensation of each executive officer to the board, and the board of directors has then approved.

Annual Base Salary

The annual base salaries of our named executive officers are generally determined, approved and reviewed periodically by our compensation committee in order to compensate our named executive officers for the satisfactory performance of duties to our company. Annual base salaries are intended to provide a fixed component of compensation to our named executive officers, reflecting their skill sets, experience, roles and responsibilities. Base salaries for our named executive officers have generally been set at levels deemed necessary to attract and retain individuals with superior talent.

[Table of Contents](#)

The following table sets forth the annual base salaries for each of our named executive officers for 2019 and 2020.

Name	2019 Base Salary (\$)	2020 Base Salary (\$)
Lloyd M. Segal	430,000	450,000
Michael Zinda, Ph.D ⁽¹⁾	325,000	350,000
Maria Koehler, M.D. Ph.D.	405,000	410,960
Katina Dorton ⁽²⁾	350,000	N/A

(1) Dr. Zinda was appointed as our Executive Vice President, Chief Scientific Officer in May 2019. His salary was increased from \$285,000 to \$325,000 in connection with his promotion.

(2) Ms. Dorton's employment was terminated effective October 10, 2019.

Non-Equity Incentive Plan Compensation

In accordance with the terms of their respective employment agreements, our named executive officers are eligible to receive discretionary annual bonuses of up to a percentage of each executive's gross base salary based on individual performance, company performance or as otherwise determined appropriate, as determined by the compensation committee of our board of directors.

Name	2019 Bonus Target (%)	2020 Bonus Target (%)
Lloyd M. Segal	30	40
Michael Zinda, Ph.D.	20	30
Maria Koehler, M.D., Ph.D.	30	30
Katina Dorton ⁽¹⁾	35	N/A

(1) Ms. Dorton's employment was terminated effective October 10, 2019.

During fiscal year 2019, Mr. Segal and Drs. Zinda and Koehler earned bonuses as set forth in the 2019 Summary Compensation Table above based on specified company and individual performance metrics which were approved by the board of directors.

Equity-Based Incentive Awards

Our equity-based incentive awards granted to our named executive officers are designed to align our interests and those of our shareholders with those of our employees and consultants, including our executive officers. As of the date of this prospectus, share option awards were the only form of equity awards we have granted to any of our executive officers.

We have historically used share options as an incentive for long-term compensation to our executive officers because the share options allow our executive officers to profit from this form of equity compensation only if our share price increases relative to the share option's exercise price, which exercise price is set at the fair market value of our common shares on the date of grant. Vesting of equity awards is generally tied to each officer's continuous service with us and serves as an additional retention measure. We may grant equity awards at such times as our board of directors or compensation committee determines appropriate. Our executives generally are awarded an initial grant in the form of a share option in connection with their commencement of employment with us. Additional grants may occur periodically in order to specifically incentivize executives with respect to achieving certain corporate goals or to reward executives for exceptional performance.

Table of Contents

Prior to this offering, we have granted all share options pursuant to our Repare Therapeutics Inc. Amended and Restated Option Plan, or the Existing Plan. Following this offering, we will grant equity incentive awards under the terms of the 2020 Equity Incentive Plan, or the 2020 Plan. The terms of our equity plans are described below under “— Equity Incentive Plans.”

All options are granted with an exercise price per share that is no less than the fair market value of our common shares on the date of grant of such award. Our share option awards generally vest over a four-year period and may be subject to acceleration of vesting and exercisability under certain termination and change in control events. See “— Outstanding Equity Awards at Fiscal Year-End.”

Outstanding Equity Awards at Fiscal Year-End

The following table provides certain information regarding the outstanding equity awards granted to our named executive officers that remain outstanding as of December 31, 2019. All awards were granted pursuant to the Existing Plan. See “—Equity Incentive Plans— Existing Plan” below for additional information.

Name and Principal Position	Grant Date	Vesting Commencement Date	Option Awards (1)			
			Number of Securities Underlying Unexercised Options (#) (Exercisable)	Number of Securities Underlying Unexercised Options (#) (Unexercisable)	Option Exercise Price (\$)(2)	Option Expiration Date
Lloyd M. Segal <i>President and Chief Executive Officer</i>	12/1/2017	6/22/2017	180,427	108,256 ⁽³⁾	1.64	6/22/2027
	3/29/2019	3/29/2019	—	272,187 ⁽³⁾	2.06	3/29/2029
	12/16/2019	12/16/2019	—	486,638 ⁽⁴⁾	2.42	12/16/2029
Michael Zinda, Ph.D. <i>Executive Vice President, Chief Scientific Officer</i>	12/1/2017	6/14/2017	20,620	12,372 ⁽³⁾	1.64	6/14/2027
	12/1/2017	6/22/2017	59,283	35,570 ⁽³⁾	1.64	6/22/2027
	3/29/2019	3/29/2019	—	94,028 ⁽³⁾	2.06	3/29/2029
	12/16/2019	12/16/2019	—	197,954 ⁽⁴⁾	2.42	12/16/2029
Maria Koehler, M.D., Ph.D. <i>Executive Vice President, Chief Medical Officer</i>	3/29/2019	5/1/2019	—	193,830 ⁽³⁾	2.06	5/1/2029
	12/16/2019	12/16/2019	—	111,349 ⁽⁴⁾	2.42	12/16/2029
Katina Dorton <i>Former Executive Vice President, Chief Financial Officer</i>	3/29/2019	4/15/2019	64,953	—	2.06	4/10/2020

(1) All of the awards in this table were granted under the Existing Plan, the terms of which are described below under “—Equity Incentive Plans – Existing Plan.”

(2) All of the option awards listed in the table were granted with an exercise price per share that is no less than the fair market value of our common shares on the date of grant of such award, as determined in good faith by our board of directors.

(3) Twenty-five percent of the common shares subject to this award vested on the first anniversary of the vesting commencement date, and the remaining shares vested in 36 equal monthly installments thereafter, subject to the officer’s continued service through each vesting date.

(4) Twenty-five percent of the common shares subject to this award vested on the first anniversary of the vesting commencement date, and the remaining shares vested in 39 equal monthly installments thereafter, subject to the officer’s continued service through each vesting date.

(5) The vesting of Ms. Dorton’s option award accelerated upon her termination of employment effective October 10, 2019, pursuant to the terms of her separation agreement with us.

On and after this offering, we may, on an annual basis or otherwise, grant additional equity awards to our executive officers pursuant to our 2020 Equity Incentive Plan, or the 2020 Plan, the terms of which are described below under “—Equity Incentive Plans—2020 Plan.”

Equity Awards Relating to the Completion of this Offering

On June 10, 2020, our board of directors approved grants of an aggregate of 590,702 options under our 2020 Plan, of which 551,795 options will be granted to our named executive officers and certain of our other employees, contingent and effective upon the execution of the underwriting agreement for this offering, with an exercise price equal to the initial public offering price per share. Of these option grants, an aggregate of 437,148 options will be granted to our named executive officers, including 354,668 options to Mr. Segal, 41,240 options to Dr. Zinda and 41,240 options to Dr. Koehler. The options to be awarded to our named executive officers will vest over a four-year period, with 25% of the shares subject to the option vesting on the first anniversary of the vesting commencement date, with the remainder vesting monthly in equal installments over the following 36 months such that the options will vest in full on the fourth anniversary of the vesting commencement date, subject to the executive's continuous service with us as of each such vesting date.

Employment Arrangements with our Named Executive Officers

We have entered into employment agreements with each of our named executive officers which will become effective upon the execution of the underwriting agreement for this offering. The agreements set forth the terms and conditions of each executive's employment with us, including base salary, bonus opportunity, eligibility for employee benefits and severance benefits upon a qualifying termination of employment, and certain non-solicitation and non-competition provisions. Any potential payments and benefits due upon a qualifying termination of employment or a change in control are further described below under "— Potential Payments and Benefits upon Termination or Change in Control."

The employment of each of our named executive officers may be terminated at any time in accordance with the terms of the respective agreements. In addition, each of our named executive officers has executed a form of our standard proprietary information and inventions agreement. The material terms of each agreement are described below.

Lloyd M. Segal. We entered into an employment agreement with Mr. Segal in January 2018, effective July 1, 2017 in connection with his appointment as our President and Chief Executive Officer. In June 2020, we entered into a new employment agreement with Mr. Segal which will become effective upon the execution of the underwriting agreement for this offering. Pursuant to his June 2020 employment agreement, Mr. Segal will be entitled to an annual base salary of \$550,000, an annual target bonus with a target amount equal to 50% of his annual base salary and certain severance benefits, as described below under "—Potential Payments and Benefits upon Termination or Change of Control." To qualify for the annual target bonus set at a percentage of his adjusted base salary, in respect of any calendar year, Mr. Segal must remain continuously employed with us through the 15th day of February of the following year. Under the June 2020 employment agreement, we agreed to grant Mr. Segal an option to acquire 354,668 common shares pursuant to the 2020 Plan, contingent and effective upon the execution of the underwriting agreement for this offering, with an exercise price equal to the initial public offering price per share. The options will vest over a four-year period, with 25% of the shares vesting on the one-year anniversary of the grant date, with the remainder vesting monthly in equal installments over the following 36 months such that the options will vest in full on the four-year anniversary of the grant date, subject to Mr. Segal's continuous employment through such vesting dates. Mr. Segal is also eligible for additional equity awards under our equity compensation plans, as may be granted from time to time.

Michael Zinda, Ph.D. We entered into an employment agreement with Dr. Zinda in August 2017, effective June 14, 2017, connection with his appointment as our Executive Vice President, Head of Research and Development from June 2017 to December 2018. He subsequently was promoted to the role of our Executive Vice President, Chief Scientific Officer effective January 1, 2019. In June 2020, we entered into a new employment agreement with Dr. Zinda which will become effective upon the execution of the underwriting agreement for this offering. Pursuant to his June 2020 employment agreement, Dr. Zinda will be entitled to an annual base salary of \$415,000, an annual target bonus with a target amount equal to 40% of his annual base salary and certain severance benefits, as described below under "—Potential Payments and Benefits upon

[Table of Contents](#)

Termination or Change of Control.” To qualify for the annual target bonus set at a percentage of his adjusted base salary in respect of any calendar year, Dr. Zinda must remain continuously employed with us through the 15th day of February of the following year. Under the June 2020 employment agreement, we agreed to grant Dr. Zinda an initial option to acquire 41,240 common shares pursuant to the 2020 Plan, contingent and effective upon the execution of the underwriting agreement for this offering, with an exercise price equal to the initial public offering price per share. The options will vest over a four-year period, with 25% of the shares vesting on the one-year anniversary of the grant date, with the remainder vesting monthly in equal installments over the following 36 months such that options will vest in full on the four-year anniversary of the grant date, subject to Dr. Zinda’s continuous employment through such vesting dates. Dr. Zinda is also eligible for additional equity awards under our equity compensation plans, as may be granted from time to time.

Maria Koehler, M.D., Ph.D. We entered into an employment agreement with Dr. Koehler in April 2019, effective May 1, 2019 in connection with her appointment as our Executive Vice President, Chief Medical Officer. In June 2020, we entered into a new employment agreement with Dr. Koehler which will become effective upon the execution of the underwriting agreement for this offering. Pursuant to her June 2020 employment agreement, Dr. Koehler will be entitled to an annual base salary of \$415,000, an annual target bonus with a target amount equal to 40% of her annual base salary and certain severance benefits, as described below under “—Potential Payments and Benefits upon Termination or Change of Control.” To qualify for the annual target bonus set at a percentage of his adjusted base salary in respect of any calendar year, Dr. Koehler must remain continuously employed with us through the 15th day of February of the following year. Under the June 2020 employment agreement, we agreed to grant Dr. Koehler an option to acquire 41,240 common shares pursuant to the 2020 Plan, contingent and effective upon the execution of the underwriting agreement for this offering, with an exercise price equal to the initial public offering price per share. The options will vest over a four-year period, with 25% of the shares vesting on the one-year anniversary of the grant date, with the remainder vesting monthly in equal installments over the following 36 months such that it will vest in full on the four-year anniversary of the grant date, subject to Dr. Koehler’s continuous employment through such vesting dates.

Separation Agreement with Katina Dorton

Ms. Dorton’s employment as our Executive Vice President, Chief Financial Officer was terminated effective October 10, 2019. In connection with her termination, we entered into a separation agreement with Ms. Dorton and an independent contractor agreement with Ms. Dorton, pursuant to which Ms. Dorton agreed to provide us with certain consulting services following her termination and through December 31, 2019. In connection with the separation agreement, she entered into a full and final release of any claims relating to her employment with us or termination therefrom. Pursuant to her separation agreement, Ms. Dorton received the following severance benefits: (i) her fully earned but unpaid base salary through the date of termination at the rate then in effect, plus accrued vacation and any other reimbursements or expenses to which she was entitled; (ii) a cash payment, payable in nine equal monthly installments, in the amount of \$354,375, reduced dollar-for-dollar by the \$9,000 in consulting fees paid to Ms. Dorton pursuant to her independent contractor agreement; (iii) continuation of health benefits for a period of nine months following her termination date; and (iv) the automatic acceleration of the vesting and exercisability of 64,953 outstanding but unvested options. The remaining 157,745 options then held by Ms. Dorton were immediately forfeited on her termination date. Ms. Dorton may exercise her vested options within six months following her termination. She subsequently exercised all of her vested options on January 8, 2020.

Potential Payments and Benefits upon Termination or Change in Control

Regardless of the manner in which the executive's service with us terminates, each of Mr. Segal, Dr. Zinda and Dr. Koehler is entitled to receive amounts earned during his or her term of service, including unpaid salary, accrued unused vacation and any vested entitlements under any employee benefit plan. Pursuant to the employment agreements we entered into with each of Mr. Segal, Dr. Zinda and Dr. Koehler in June 2020, which will become effective upon the execution of the underwriting agreement for this offering, each executive will be entitled to the following payments and benefits upon a qualifying termination of employment or a change in control. The terms of "cause," "disability" and "good reason" are each defined in the respective amended and restated employment agreements.

If the executive is terminated by us involuntarily without "cause" and not due to death or "disability" or the executive resigns for "good reason," in each case, not in connection with a "change in control" (as defined in the 2020 Plan), then:

- With respect to Mr. Segal, he shall be entitled to (1) cash severance equal to 12 months of base salary, paid in 12 equal monthly installments; (2) continued participation in our group insurance plans and employee benefits for 12 months; (3) accelerated vesting of his options that are subject to time-based vesting schedule that were scheduled to vest in the 12 months following the date of termination, and Mr. Segal's vested options shall remain exercisable for up to 12 months following such termination; and (4) a lump sum payment equal to his target bonus pro-rated for the year of termination.
- With respect to Dr. Zinda and Dr. Koehler, the executive shall be entitled to (1) cash severance equal to seven months of base salary, paid in seven equal monthly installments; (2) payment of COBRA premiums for up to seven months; and (3) accelerated vesting of the executive's options that are subject to time-based vesting schedule that were scheduled to vest in the six months following the date of termination, and the executives' vested options (other than options qualifying as incentive stock options) shall remain exercisable for up to nine months following the date of such termination.

If within 90 days before or within 12 months following a change in control, either of Mr. Segal, Dr. Zinda and Dr. Koehler is terminated by us (or a successor) involuntarily without "cause" and not due to death or "disability" or the executive resigns for "good reason," then:

- With respect to Mr. Segal, he shall be entitled to (1) a lump sum cash severance equal to 1.5 times the sum of base salary and the higher of his target bonus for the year in which the termination occurs or the annual bonus received for the prior year; (2) continued participation in our group insurance plans and employee benefits for 18 months; (3) full accelerated vesting of his options that are subject to time-based vesting schedule, and Mr. Segal's vested options shall remain exercisable for up to 12 months following such termination; and (4) a lump sum payment equal to his target bonus pro-rated for the year of termination.
- With respect to Dr. Zinda and Dr. Koehler, the executive will be entitled to (1) a lump sum cash severance equal to the sum of base salary and the higher of the executive's target bonus for the year in which the termination occurs or the annual bonus received for the prior year; (2) payment of COBRA premiums for up to 12 months; and (3) full accelerated vesting of the executive's options that are subject to time-based vesting schedule, and the executives' vested options (other than options qualifying as incentive stock options) shall remain exercisable for up to nine months following such termination.

Mr. Segal's, Dr. Zinda's and Dr. Koehler's severance payments and benefits under the employment agreements to become effective upon the execution of the underwriting agreement for this offering are, in all events, conditioned on the executive, among other things, giving notice following a cure period (as applicable), complying with post-resignation or post termination obligations under the applicable agreement, including any non-disparagement and confidentiality obligations contained therein, and signing a general release of claims against us.

[Table of Contents](#)

Further, in the event that executive's employment terminates due to death or "disability", then:

- With respect to Mr. Segal, he shall be entitled to (1) continued participation in our group insurance plans and employee benefits for 12 months; and (2) accelerated vesting of his options that are subject to time-based vesting schedule that were scheduled to vest in the 12 months following the date of termination, and Mr. Segal's vested options shall remain exercisable for up to 12 months following such termination.
- With respect to Dr. Zinda and Dr. Koehler, the executive shall be entitled to (1) payment of COBRA premiums for up to seven months and (2) accelerated vesting of the executive's options that are subject to time-based vesting schedule that were scheduled to vest in the 12 months following the date of termination, and the executives' vested options (other than options qualifying as incentive stock options) shall remain exercisable for up to 12 months following the date of such termination.

If we elect to enforce the non-competition provisions set forth in Dr. Zinda or Dr. Koehler's employment agreement following an involuntary termination by us for "just cause" (as such term is defined in the respective agreement) or such executive's resignation, then we have agreed to provide the executive with consideration in the form of the greater of (x) continuing salary payments for one year following the date of the executive's termination at a rate equal to no less than 50% of the highest annualized base salary paid to the executive by us within the two years prior to the executive's termination date and (y) accelerated vesting of all of the executive's options that are subject to a time-based vesting schedule which would have vested if the executive had remained employed for an additional 12 months following the termination date.

Health and Welfare and Retirement Benefits; Perquisites

These payments and benefits discussed above are in addition to eligibility to participate in benefits available generally to salaried employees, including accrued benefits under our health and welfare plans and arrangements and vacation pay or other accrued benefits under our medical and dental insurance plans, that are not generally described. Since 2017, we have offered medical, dental, vision, life and accidental death and dismemberment insurance to our Canadian employees. Since July 1, 2019, we have offered medical, dental, vision, life and accidental death and dismemberment insurance to our U.S. employees. We only provide limited perquisites or personal benefits to our named executive officers. Our board of directors may elect to adopt qualified or nonqualified benefit plans in the future, if it determines that doing so is in our best interests.

Equity Incentive Plans

The principal features of our equity incentive plans are summarized below. These summaries are qualified in their entirety by reference to the actual text of the plans, which are filed as exhibits to the registration statement of which this prospectus is a part.

2020 Plan

In June 2020, our board of directors adopted and our shareholders approved our 2020 Plan, which is a successor to and continuation of our Existing Plan. The 2020 Plan will become effective upon, and no share awards may be granted under the 2020 Plan until, the date of the underwriting agreement related to this offering. Once the 2020 Plan is effective, no further grants will be made under the Existing Plan. In June 2020, our board of directors approved an aggregate of 590,702 options under the 2020 Plan, to be granted contingent and effective upon the execution of the underwriting agreement for this offering; no common shares have been issued under our 2020 Plan.

Awards. Our 2020 Plan provides for the grant of incentive share options, or ISOs, within the meaning of Section 422 of the Code, to employees, including employees of any parent or subsidiary, and for the grant of

[Table of Contents](#)

nonstatutory share options, or NSOs, share appreciation rights, restricted share awards, restricted share unit awards, performance share awards, performance cash awards and other forms of share awards to employees, directors and consultants, including employees and consultants of our affiliates.

Authorized Shares. Initially, the maximum number of our common shares that may be issued under our 2020 Plan after it becomes effective will be the sum of (1) 3,600,000 new shares, plus (2) the number of shares (not to exceed 3,807,448 shares) (i) that remain available for the issuance of awards under our Existing Plan at the time our 2020 Plan becomes effective, and (ii) any shares subject to outstanding options or other share awards that were granted under our Existing Plan that terminate or expire prior to exercise or settlement; are forfeited because of the failure to vest; or are reacquired or withheld (or not issued) to satisfy a tax withholding obligation or the purchase or exercise price. In addition, the number of our common shares reserved for issuance under our 2020 Plan will automatically increase on January 1 of each calendar year, starting on January 1, 2021 (assuming the 2020 Plan becomes effective in 2020) through January 1, 2030, in an amount equal to 5.0% of the total number of our capital shares outstanding on the last day of the calendar month before the date of each automatic increase, or a lesser number of shares determined by our board of directors. The maximum number of our common shares that may be issued on the exercise of ISOs under our 2020 Plan is 13,000,000 shares.

Shares subject to share awards granted under our 2020 Plan that expire or terminate without being exercised in full or that are paid out in cash rather than in shares do not reduce the number of shares available for issuance under our 2020 Plan. If any common shares issued pursuant to a share award are forfeited back to or repurchased or reacquired by us for any reason, the shares that are forfeited or repurchased or reacquired will revert to and again become available for issuance under the 2020 Plan. Any shares reacquired in satisfaction of tax withholding obligations or as consideration for the exercise or purchase price of a share award will again become available for issuance under the 2020 Plan.

The maximum number of common shares subject to share awards granted under the 2020 Plan or otherwise during any one calendar year to any non-employee director, taken together with any cash fees paid by us to such non-employee director during such calendar year for service on the board of directors, will not exceed \$1.0 million in total value (calculating the value of any such share awards based on the grant date fair value of such share awards for financial reporting purposes), or, with respect to the calendar year in which a non-employee director is first appointed or elected to our board of directors, \$1.0 million.

Plan Administration. Our board of directors, or a duly authorized committee of our board of directors, will administer our 2020 Plan and is referred to as the “plan administrator” herein. Our board of directors may also delegate to one or more of our officers the authority to (1) designate employees (other than officers) to receive specified share awards and (2) determine the number of shares subject to such share awards. Under our 2020 Plan, our board of directors has the authority to determine award recipients, grant dates, the numbers and types of share awards to be granted, the applicable fair market value, and the provisions of each share award, including the period of exercisability and the vesting schedule applicable to a share award.

Under the 2020 Plan, the board of directors also generally has the authority to effect, with the consent of any adversely affected participant, (A) the reduction of the exercise, purchase, or strike price of any outstanding award; (B) the cancellation of any outstanding award and the grant in substitution therefore of other awards, cash, or other consideration; or (C) any other action that is treated as a repricing under generally accepted accounting principles.

Options. ISOs and NSOs are granted under option agreements adopted by the plan administrator. The plan administrator determines the exercise price for options, within the terms and conditions of the 2020 Plan, provided that the exercise price of an option generally cannot be less than 100% of the fair market value of our common shares on the date of grant. Options granted under the 2020 Plan vest at the rate specified in the option agreement as determined by the plan administrator.

[Table of Contents](#)

The plan administrator determines the term of options granted under the 2020 Plan, up to a maximum of 10 years. Unless the terms of an optionholder's option agreement provide otherwise, if an optionholder's service relationship with us or any of our affiliates ceases for any reason other than disability, death, or cause, the optionholder may generally exercise any vested options for a period of three months following the cessation of service. This period may be extended in the event that exercise of the option is prohibited by applicable securities laws or our insider trading policy. If an optionholder's service relationship with us or any of our affiliates ceases due to death, or an optionholder dies within a certain period following cessation of service, the optionholder or a beneficiary may generally exercise any vested options for a period of 18 months following the date of death. If an optionholder's service relationship with us or any of our affiliates ceases due to disability, the optionholder may generally exercise any vested options for a period of 12 months following the cessation of service. In the event of a termination for cause, options generally terminate upon the termination date. In no event may an option be exercised beyond the expiration of its term.

Acceptable consideration for the purchase of common shares issued upon the exercise of an option will be determined by the plan administrator and may include (1) cash, check, bank draft or money order, (2) a broker-assisted cashless exercise, (3) the tender of our common shares previously owned by the optionholder, (4) a net exercise of the option if it is an NSO, or (5) other legal consideration approved by the plan administrator.

Unless the plan administrator provides otherwise, options generally are not transferable except by will or the laws of descent and distribution. Subject to approval of the plan administrator or a duly authorized officer in each case, (i) an option may be transferred pursuant to a domestic relations order, official marital settlement agreement, or other divorce or separation instrument and (ii) an optionholder may designate a beneficiary who may exercise the option following the optionholder's death.

Tax Limitations on ISOs. The aggregate fair market value, determined at the time of grant, of our common shares with respect to ISOs that are exercisable for the first time by an award holder during any calendar year under all of our equity benefit plans may not exceed \$100,000. Options or portions thereof that exceed such limit will generally be treated as NSOs. No ISO may be granted to any person who, at the time of the grant, owns or is deemed to own shares possessing more than 10% of our total combined voting power or that of any of our affiliates unless (1) the option exercise price is at least 110% of the fair market value of the shares subject to the option on the date of grant, and (2) the term of the ISO does not exceed five years from the date of grant.

Restricted Share Unit Awards. Restricted share unit awards are granted under restricted share unit award agreements adopted by the plan administrator. Restricted share unit awards may be granted in consideration for any form of legal consideration that may be acceptable to our board of directors and permissible under applicable law. A restricted share unit award may be settled by cash, delivery of shares, a combination of cash and shares as deemed appropriate by the plan administrator, or in any other form of consideration set forth in the restricted share unit award agreement. Additionally, dividend equivalents may be credited in respect of shares covered by a restricted share unit award. Except as otherwise provided in the applicable award agreement, restricted share unit awards that have not vested will be forfeited once the participant's continuous service ends for any reason.

Restricted Share Awards. Restricted share awards are granted under restricted share award agreements adopted by the plan administrator. A restricted share award may be awarded in consideration for cash, check, bank draft or money order, past or future services to us, or any other form of legal consideration that may be acceptable to our board of directors and permissible under applicable law. The plan administrator determines the terms and conditions of restricted share awards, including vesting and forfeiture terms. If a participant's service relationship with us ends for any reason, we may receive any or all of the common shares held by the participant that have not vested as of the date the participant terminates service with us through a forfeiture condition or a repurchase right.

Share Appreciation Rights. Share appreciation rights are granted under share appreciation right agreements adopted by the plan administrator. The plan administrator determines the purchase price or strike price for a share

[Table of Contents](#)

appreciation right, which generally cannot be less than 100% of the fair market value of our common shares on the date of grant. A share appreciation right granted under the 2020 Plan vests at the rate specified in the share appreciation right agreement as determined by the plan administrator.

The plan administrator determines the term of share appreciation rights granted under the 2020 Plan, up to a maximum of 10 years. If a participant's service relationship with us or any of our affiliates ceases for any reason other than cause, disability, or death, the participant may generally exercise any vested share appreciation right for a period of three months following the cessation of service. This period may be further extended in the event that exercise of the share appreciation right following such a termination of service is prohibited by applicable securities laws or our insider trading policy. If a participant's service relationship with us, or any of our affiliates, ceases due to disability or death, or a participant dies within a certain period following cessation of service, the participant or a beneficiary may generally exercise any vested share appreciation right for a period of 12 months in the event of disability and 18 months in the event of death. In the event of a termination for cause, share appreciation rights generally terminate immediately upon the occurrence of the event giving rise to the termination of the individual for cause. In no event may a share appreciation right be exercised beyond the expiration of its term.

Performance Awards. The 2020 Plan permits the grant of performance-based share and cash awards. Our compensation committee may structure awards so that the share or cash will be issued or paid only following the achievement of certain pre-established performance goals during a designated performance period.

The performance goals that may be selected include one or more of the following: (i) sales; (ii) revenues; (iii) assets; (iv) expenses; (v) market penetration or expansion; (vi) earnings from operations; (vii) earnings before or after deduction for all or any portion of interest, taxes, depreciation, amortization, incentives, service fees or extraordinary or special items, whether or not on a continuing operations or an aggregate or per share basis; (viii) net income or net income per common share (basic or diluted); (ix) return on equity, investment, capital or assets; (x) one or more operating ratios; (xi) borrowing levels, leverage ratios or credit rating; (xii) market share; (xiii) capital expenditures; (xiv) cash flow, free cash flow, cash flow return on investment, or net cash provided by operations; (xv) share price, dividends or total shareholder return; (xvi) development of new technologies or products; (xvii) sales of particular products or services; (xviii) economic value created or added; (xix) operating margin or profit margin; (xx) customer acquisition or retention; (xxi) raising or refinancing of capital; (xxii) successful hiring of key individuals; (xxiii) resolution of significant litigation; (xxiv) acquisitions and divestitures (in whole or in part); (xxv) joint ventures and strategic alliances; (xxvi) spin-offs, split-ups and the like; (xxvii) reorganizations; (xxviii) recapitalizations, restructurings, financings (issuance of debt or equity) or refinancings; (xxix) or strategic business criteria, consisting of one or more objectives based on the following goals: achievement of timely development, design management or enrollment, meeting specified market penetration or value added, payor acceptance, patient adherence, peer reviewed publications, issuance of new patents, establishment of or securing of licenses to intellectual property, product development or introduction (including, without limitation, any clinical trial accomplishments, regulatory or other filings, approvals or milestones, discovery of novel products, maintenance of multiple products in pipeline, product launch or other product development milestones), geographic business expansion, cost targets, cost reductions or savings, customer satisfaction, operating efficiency, acquisition or retention, employee satisfaction, information technology, corporate development (including, without limitation, licenses, innovation, research or establishment of third-party collaborations), manufacturing or process development, legal compliance or risk reduction, patent application or issuance goals, or goals relating to acquisitions, divestitures or other business combinations (in whole or in part), joint ventures or strategic alliances; and (xxx) other measures of performance selected by the board of directors.

The performance goals may be based on company-wide performance or performance of one or more business units, divisions, affiliates, or business segments, and may be either absolute or relative to the performance of one or more comparable companies or the performance of one or more relevant indices. Our board of directors is authorized at any time in its sole discretion, to adjust or modify the calculation of a

Table of Contents

performance goal for such performance period in order to prevent the dilution or enlargement of the rights of participants, (a) in the event of, or in anticipation of, any unusual or extraordinary corporate item, transaction, event or development; (b) in recognition of, or in anticipation of, any other unusual or nonrecurring events affecting us, or our financial statements in response to, or in anticipation of, changes in applicable laws, regulations, accounting principles, or business conditions; or (c) in view of the board of director's assessment of our business strategy, performance of comparable organizations, economic and business conditions, and any other circumstances deemed relevant. Specifically, the board of directors is authorized to make adjustment in the method of calculating attainment of performance goals and objectives for a performance period as follows: (i) to exclude the dilutive effects of acquisitions or joint ventures; (ii) to assume that any business divested by us achieved performance objectives at targeted levels during the balance of a performance period following such divestiture; and (iii) to exclude the effect of any change in our outstanding common share by reason of any share dividend or split, share repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination or exchange of shares or other similar corporate change, or any distributions to common shareholders other than regular cash dividends. In addition, the board of directors is authorized to make adjustment in the method of calculating attainment of performance goals and objectives for a performance period as follows: (i) to exclude restructuring and/or other nonrecurring charges; (ii) to exclude exchange rate effects, as applicable, for non-U.S. dollar denominated net sales and operating earnings; to exclude the effects of changes to generally accepted accounting standards required by the Financial Accounting Standards Board; (iv) to exclude the effects of any items that are "unusual" in nature or occur "infrequently" as determined under generally accepted accounting principles; (v) to exclude the effects to any statutory adjustments to corporate tax rates; and (vi) to make other appropriate adjustments selected by the board of directors.

Other Share Awards. The plan administrator may grant other awards based in whole or in part by reference to our common shares. The plan administrator will set the number of shares under the share award and all other terms and conditions of such awards.

Changes to Capital Structure. In the event there is a specified type of change in our capital structure, such as a share split, reverse share split, or recapitalization, appropriate adjustments will be made to (1) the class and maximum number of shares reserved for issuance under the 2020 Plan, (2) the class and maximum number of shares by which the share reserve may increase automatically each year, (3) the class and maximum number of shares that may be issued on the exercise of ISOs and (4) the class and number of shares and exercise price, strike price, or purchase price, if applicable, of all outstanding share awards.

Corporate Transactions. Our 2020 Plan provides that in the event of certain specified significant corporate transactions (or a change in control, as defined below), unless otherwise provided in an award agreement or other written agreement between us and the award holder, the plan administrator may take one or more of the following actions with respect to such share awards:

- arrange for the assumption, continuation, or substitution of a share award by a successor corporation;
- arrange for the assignment of any reacquisition or repurchase rights held by us to a successor corporation;
- accelerate the vesting, in whole or in part, of the share award and provide for its termination if not exercised (if applicable) at or before the effective time of the transaction;
- arrange for the lapse, in whole or in part, of any reacquisition or repurchase rights held by us;
- cancel or arrange for the cancellation of the share award, to the extent not vested or not exercised before the effective time of the transaction, in exchange for a cash payment, if any; or
- make a payment equal to the excess, if any, of (A) the value of the property the participant would have received on exercise of the award immediately before the effective time of the transaction, over (B) any exercise price payable by the participant in connection with the exercise.

[Table of Contents](#)

The plan administrator is not obligated to treat all share awards or portions of share awards in the same manner and is not obligated to take the same actions with respect to all participants.

Under the 2020 Plan, a corporate transaction is generally the consummation of: (1) a sale of all or substantially all of our assets, (2) the sale or disposition of more than 50% of our outstanding securities, (3) a merger or consolidation where we do not survive the transaction, or (4) a merger or consolidation where we do survive the transaction but our common shares outstanding immediately before such transaction are converted or exchanged into other property by virtue of the transaction.

Change in Control. In the event of a change in control, the plan administrator may take any of the above-mentioned actions. Awards granted under the 2020 Plan may be subject to additional acceleration of vesting and exercisability upon or after a change in control as may be provided in the applicable share award agreement or in any other written agreement between us or any affiliate and the participant, but in the absence of such provision, no such acceleration will automatically occur. Under the 2020 Plan, a change in control is generally (1) the acquisition by any person or company of more than 50% of the combined voting power of our then outstanding shares, (2) a merger, consolidation or similar transaction in which our shareholders immediately before the transaction do not own, directly or indirectly, more than 50% of the combined voting power of the surviving entity (or the parent of the surviving entity) in substantially the same proportions as their ownership immediately prior to such transaction, (3) a sale, lease, exclusive license or other disposition of all or substantially all of our assets other than to an entity more than 50% of the combined voting power of which is owned by our shareholders in substantially the same proportions as their ownership of our outstanding voting securities immediately prior to such transaction, (4) a complete dissolution or liquidation of the company or (5) when a majority of our board of directors becomes comprised of individuals who were not serving on our board of directors on the date of the underwriting agreement related to this offering, or the incumbent board, or whose nomination, appointment, or election was not approved by a majority of the incumbent board still in office.

Plan Amendment or Termination. Our board of directors has the authority to amend, suspend, or terminate our 2020 Plan, provided that such action does not materially impair the existing rights of any participant without such participant's written consent. Certain material amendments also require the approval of our shareholders. No ISOs may be granted after the tenth anniversary of the date our board of directors adopts our 2020 Plan. No share awards may be granted under our 2020 Plan while it is suspended or after it is terminated.

Existing Plan

General. Our board of directors originally adopted and our shareholders initially approved our Existing Plan in December 2016. We have subsequently amended and restated our Existing Plan, most recently in September 2019, the purpose of which was to increase the number of shares available for issuance under our Existing Plan. Our shareholders approved this recent amendment and restatement in August 2019. Following the closing of this offering and upon the adoption of our 2020 Plan, no further awards will be granted under the Existing Plan; however, awards outstanding under our Existing Plan will continue in full effect in accordance with their existing terms. Our Existing Plan provides for the grant of incentive share options and nonstatutory share options to purchase common shares of our share capital to employees, members of our board of directors and consultants. Incentive share options may be granted only to employees.

Share Reserve. No common shares will be available for future issuance under the Existing Plan following the effectiveness of the registration statement of which this prospectus forms a part. The maximum number of common shares reserved for issuance under our Existing Plan is 4,074,135. As of December 31, 2019, options to purchase 3,505,119 common shares, at exercise prices ranging from \$1.64 to \$2.42 per share, or a weighted-average exercise price of \$2.07 per share, were outstanding under our Existing Plan.

Administration. Our board of directors administers our Existing Plan. Our board of directors has full authority and discretion to take any actions it deems necessary or advisable for the administration of our Existing

Table of Contents

Plan. Our board of directors may generally cancel, amend, adjust or otherwise change any outstanding options under such circumstances as it may consider appropriate in accordance with the provisions of the Existing Plan, unless the optionholder would be adversely affected.

Options. The exercise price of options granted under our Existing Plan will be equal to or exceed the fair market value of a common share of our share capital on the grant date. Options expire at the time determined by the administrator, but in no event more than ten years after they are granted, and generally expire earlier if the optionholder's service terminates.

Capital Reorganization. If we effect a subdivision, consolidation, or similar reorganization, or any other change in capitalization that, in the option of the administrator, warrants the replacement or amendment of any existing options, the administrator may adjust: (i) the number of common shares that may be acquired on the exercise of any options; and/or (ii) the exercise price of any outstanding options, as necessary.

Liquidity Event. Upon a liquidity event, our board of directors shall have the power to accelerate the vesting of any unvested options in connection with such liquidity event in its sole discretion and/or to make such changes to the terms of the options as it considers fair and appropriate in the circumstances, acting reasonably.

In general, a "liquidity event" means the acquisition of the company by another entity by means of any transaction or series of related transactions, which results in one person, together with any related entities of such person, acquiring beneficial ownership, or exercising direction or control, over more than 50% of the combined voting power attached to all of our outstanding securities; a sale, lease, transfer, exclusive license or disposition of all or substantially all of our assets; our adoption of a plan of liquidation providing for the distribution of all or substantially all of our assets; or any other event so specified by our board of directors, subject to certain exceptions.

Transferability. A participant may not transfer options under our Existing Plan other than by will, the laws of descent and distribution, or as otherwise provided under our Existing Plan.

Plan Amendment or Termination. Subject to any shareholders agreement, our board of directors may terminate the Existing Plan at any time without shareholder approval. Our board of directors has the authority to amend our Existing Plan, provided that such action is approved by our shareholders to the extent shareholder approval is necessary. As described above, our Existing Plan will terminate upon the effective date of our 2020 Plan.

2020 Employee Share Purchase Plan

In June 2020, our board of directors adopted and our shareholders approved the 2020 Employee Share Purchase Plan, or the ESPP. The ESPP will become effective immediately prior to and contingent upon the date of the underwriting agreement related to this offering. The purpose of the ESPP is to secure the services of new employees, to retain the services of existing employees, and to provide incentives for such individuals to exert maximum efforts toward our success and that of our affiliates. The ESPP is intended to qualify as an "employee stock purchase plan" within the meaning of Section 423 of the Code for U.S. employees. In addition, the ESPP authorizes grants of purchase rights that do not comply with Section 423 of the Code under a separate non-423 component. In particular, where such purchase rights are granted to employees who are employed or located outside the United States, our board of directors may adopt rules that are beyond the scope of Section 423 of the Code.

Share Reserve. Following this offering, the ESPP authorizes the issuance of 327,000 common shares of our share capital under purchase rights granted to our employees or to employees of any of our designated affiliates. The number of shares of our share capital reserved for issuance will automatically increase on January 1 of each calendar year, beginning on January 1, 2021 (assuming the ESPP becomes effective in 2020) through January 1,

[Table of Contents](#)

2030, by the lesser of (1) 1.0% of the total number of shares of our share capital outstanding on the last day of the calendar month before the date of the automatic increase and (2) 3,300,000 shares; provided that before the date of any such increase, our board of directors may determine that such increase will be less than the amount set forth in clauses (1) and (2). As of the date hereof, no shares of our share capital have been purchased under the ESPP.

Administration. Our board of directors administers the ESPP and may delegate its authority to administer the ESPP to our compensation committee. The ESPP is implemented through a series of offerings under which eligible employees are granted purchase rights to purchase shares of our share capital on specified dates during such offerings. Under the ESPP, we may specify offerings with durations of not more than 27 months, and may specify shorter purchase periods within each offering. Each offering will have one or more purchase dates on which shares of our share capital will be purchased for employees participating in the offering. An offering under the ESPP may be terminated under certain circumstances.

Payroll Deductions. Generally, all regular employees, including executive officers, employed by us or by any of our designated affiliates, may participate in the ESPP and may contribute, normally through payroll deductions, up to 15% of their earnings (as defined in the ESPP) for the purchase of our share capital under the ESPP. Unless otherwise determined by our board of directors, common shares will be purchased for the accounts of employees participating in the ESPP at a price per share that is at least the lesser of (1) 85% of the fair market value of a share of our share capital on the first date of an offering or (2) 85% of the fair market value of a share of our share capital on the date of purchase.

Limitations. Employees may have to satisfy one or more of the following service requirements before participating in the ESPP, as determined by our board of directors, including: (1) being customarily employed for more than 20 hours per week, (2) being customarily employed for more than five months per calendar year or (3) continuous employment with us or one of our affiliates for a period of time (not to exceed two years). No employee may purchase shares under the ESPP at a rate in excess of \$25,000 worth of our common shares based on the fair market value per share of our common shares at the beginning of an offering for each calendar year such a purchase right is outstanding. Finally, no employee will be eligible for the grant of any purchase rights under the ESPP if immediately after such rights are granted, such employee has voting power over 5% or more of our outstanding capital shares measured by vote or value under Section 424(d) of the Code.

Changes to Capital Structure. In the event that there occurs a change in our capital structure through such actions as a share split, merger, consolidation, reorganization, recapitalization, reincorporation, share dividend, dividend in property other than cash, large nonrecurring cash dividend, liquidating dividend, combination of shares, exchange of shares, change in corporate structure, or similar transaction, the board of directors will make appropriate adjustments to: (1) the class(es) and maximum number of shares reserved under the ESPP, (2) the class(es) and maximum number of shares by which the share reserve may increase automatically each year, (3) the class(es) and number of shares subject to and purchase price applicable to outstanding offerings and purchase rights and (4) the class(es) and number of shares that are subject to purchase limits under ongoing offerings.

Corporate Transactions. In the event of certain significant corporate transactions, any then-outstanding rights to purchase our shares under the ESPP may be assumed, continued, or substituted for by any surviving or acquiring entity (or its parent company). If the surviving or acquiring entity (or its parent company) elects not to assume, continue, or substitute for such purchase rights, then the participants' accumulated payroll contributions will be used to purchase shares of our share capital within 10 business days before such corporate transaction, and such purchase rights will terminate immediately.

Under the ESPP, a corporate transaction is generally the consummation of: (1) a sale of all or substantially all of our assets, (2) the sale or disposition of more than 50% of our outstanding securities, (3) a merger or consolidation where we do not survive the transaction and (4) a merger or consolidation where we do survive the

[Table of Contents](#)

transaction but the shares of our share capital outstanding immediately before such transaction are converted or exchanged into other property by virtue of the transaction.

Amendment or Termination. Our board of directors has the authority to amend or terminate our ESPP, provided that except in certain circumstances such amendment or termination may not materially impair any outstanding purchase rights without the holder's consent. We will obtain shareholder approval of any amendment to our ESPP as required by applicable law or listing requirements.

Limitation on Liability and Indemnification Matters

Under the QBCA and our amended and restated bylaws to be in effect upon the completion of this offering, we must indemnify our current or former directors and officers, agents or any other individuals who act or has acted at our request as a director or officer of another group, against all costs, charges and expenses reasonably incurred in the exercise of such individual's functions, including an amount paid to settle an action or satisfy a judgment, or arising from any investigative or other proceeding in which such individual is involved. The QBCA also provides that we must advance moneys to such individual for costs, charges and expenses incurred in connection with such a proceeding; provided that such individual shall repay such payment if he or she does not fulfill the conditions described below.

Indemnification is prohibited under the QBCA unless the individual:

- acted with honesty and loyalty in our interests, or in the interest of the other group for which the individual acted as director or officer or in a similar capacity at our request; and
- in the case of a proceeding that is enforced by a monetary penalty, the individual had reasonable grounds for believing that his or her conduct was lawful.

The QBCA and our bylaws authorize us to purchase and maintain insurance for the benefit of each of our current or former directors or officers and each person who acts or acted at our request as a director, officer or an individual acting in a similar capacity, of another entity.

In addition, we have entered, and intend to continue to enter, into separate indemnity agreements with each of our directors and officers. These indemnity agreements, among other things, require us to indemnify our directors and officers for certain expenses, including attorneys' fees, judgments, fines and settlement amounts incurred by a director or officer in any action or proceeding arising out of their services as a director or officer, or any other company or enterprise to which the person provides services at our request.

We maintain a directors' and officers' insurance policy pursuant to which our directors and officers are insured against liability for actions taken in their capacities as directors and officers. We believe that these provisions in our articles of continuance and amended and restated bylaws and these indemnity agreements are necessary to attract and retain qualified persons as directors and officers.

Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended, or the Securities Act, may be permitted to directors, officers or control persons, in the opinion of the SEC, such indemnification is against public policy, as expressed in the Securities Act and is therefore unenforceable.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

The following includes a summary of transactions since January 1, 2017 and any currently proposed transactions, to which we were or are to be a participant, in which:

- the amount involved exceeds the lesser of \$120,000 or one percent of the average of our total assets at year end for the last two completed fiscal years, and
- any of our directors, executive officers or holders of more than 5% of our share capital, or any affiliate or member of the immediate family of the foregoing persons, had or will have a direct or indirect material interest.

Preferred Share Financings***Series A Preferred Share Financing***

In June 2017 and January 2019, we sold an aggregate of 10,182,844 of our Series A preferred shares in multiple closings at a purchase price of \$4.91 per share for an aggregate amount of \$50.0 million. The following table summarizes purchases of our Series A preferred shares by related parties. Each Series A preferred share in the table below will be converted into one common share immediately prior to the completion of this offering.

Name	Series A Preferred Shares (#)	Aggregate Cash Purchase Price (\$)
Entities affiliated with Versant(1)	3,877,314	19,038,462
Entities affiliated with MPM(2)	1,801,581	8,846,154
UBS Oncology Impact Fund, L.P.(3)	1,801,580	8,846,154
Fonds de solidarité des travailleurs et travailleuses du Québec	1,370,767	6,730,769

- (1) Represents (i) 1,257,967 Series A preferred shares purchased by Versant Venture Capital V, L.P., or Versant V, (ii) 95,738 Series A preferred shares purchased by Versant Venture Capital V (Canada) LP, or Versant V Canada, (iii) 41,886 Series A preferred shares purchased by Versant Ophthalmic Affiliates Fund I, L.P., or Versant Ophthalmic, (iv) 37,840 Series A preferred shares purchased by Versant Affiliates Fund V, L.P., or Versant Affiliates V, and (v) 2,443,883 Series A preferred shares purchased by Versant Venture Capital VI, L.P., or Versant VI. Versant V, Versant V Canada, Versant Ophthalmic, Versant Affiliates V, Versant VI and Versant Vantage (as defined below) are collectively referred to as the Versant Entities. Versant Ventures V LLC is the general partner of each of Versant V, Versant Ophthalmic and Versant Affiliates V and has voting and dispositive control over the shares held by such Entities. Jerel Davis, Ph.D., a member of our board of directors, is a managing director of Versant Ventures V, and, as a result, may be deemed to share voting and investment power with respect to the shares held by each of Versant V, Versant Ophthalmic and Versant Affiliates V. Versant Ventures V (Canada), L.P. is the general partner of Versant V Canada and Versant Ventures V GP-GP (Canada), Inc. is the sole general partner of Versant Ventures V (Canada), L.P. and has voting and dispositive control over the shares held by Versant V Canada. Dr. Davis is a director of Versant Ventures V GP-GP (Canada), Inc. and, as a result, may be deemed to share voting and investment power with respect to the shares held by Versant Ventures Canada. Versant Ventures VI GP, L.P. is the sole general partner of Versant VI and Versant Ventures VI GP-GP, LLC is the sole general partner of Versant Ventures VI GP, L.P. and has voting and dispositive control over the shares held by Versant VI. Dr. Davis is a managing director of Versant Ventures VI GP-GP, LLC, and, as a result, may be deemed to share voting and investment power with respect to the shares held by Versant VI. The Versant Entities collectively hold more than 5% of our share capital.
- (2) Represents (i) 1,636,136 Series A preferred shares purchased by MPM Bioventures 2014, L.P., or MPM 2014, (ii) 109,128 Series A preferred shares purchased by MPM Bioventures 2014 (B), L.P., or MPM B 2014 and (iii) 56,317 Series A preferred shares purchased by MPM Asset Management Investors BV2014 LLC, or MPM LLC. MPM 2014, MPM B 2014 and MPM LLC are collectively referred to as the MPM

[Table of Contents](#)

Entities. Todd Foley, a member of our board of directors, is a Managing Director of MPM BioVentures 2014 LLC, or BV2014 LLC. BV2014 LLC is the Managing Member of MPM BioVentures 2014 GP LLC, which is the General Partner of MPM 2014 and MPM B 2014. MPM LLC invests alongside MPM 2014 and MPM B 2014. As a result, Todd Foley may be deemed to share voting and investment power with respect to the shares held by each of the MPM Entities. The MPM Entities collectively hold more than 5% of our share capital.

(3) UBS Oncology Impact Fund L.P. is a holder of more than 5% of our share capital.

In connection with and as partial consideration for the Series A preferred share financing described above, an aggregate principal amount of \$2.75 million of convertible promissory notes held by certain of the Versant Entities were redeemed and converted into 907,291 Series A preferred shares at a price of \$3.03 per share. Following the issuance of the 907,291 Series A preferred shares and the payment of accrued interest of \$45,589, the convertible promissory notes were cancelled and are of no further force or effect.

Series B Preferred Share Financing

In September 2019, we sold an aggregate of 10,468,258 of our Series B preferred shares at a purchase price of \$7.88 per share for an aggregate amount of \$82.5 million. The following table summarizes purchases of our Series B preferred shares by related parties. Each Series B preferred share in the table below will be converted into one common share immediately prior to the completion of this offering.

Name	Series B Preferred Shares (#)	Aggregate Cash Purchase Price (\$)
OrbiMed Private Investments VII, L.P.(1)	2,601,325	20,500,000
Entities affiliated with Cowen Healthcare Investments(2)	1,903,408	15,000,000
Redmile Biopharma Investments II, L.P.	1,586,174	12,500,000
Entities affiliated with Versant(3)	1,460,744	11,511,538
Entities affiliated with MPM(4)	952,191	7,503,846
Fonds de solidarité des travailleurs et travailleuses du Québec	383,122	3,019,232
UBS Oncology Impact Fund, L.P.(5)	336,757	2,653,846

- (1) Represents shares purchase by OrbiMed Private Investments VII, L.P., or OrbiMed. OrbiMed Advisors LLC, or OrbiMed Advisors, is the managing member of OrbiMed Capital GP VII LLC, or OrbiMed GP VII. OrbiMed GP VII is the general partner of OrbiMed. David Bonita, M.D., a member of our board of directors, is a member of OrbiMed Advisors, and, as a result, may be deemed to share voting and investment power with respect to the shares held by OrbiMed. OrbiMed is a holder of more than 5% of our share capital.
- (2) Represents (i) 1,773,210 Series B preferred shares purchased by Cowen Healthcare Investments II LP, or CHI II, and (ii) 130,198 Series B preferred shares purchased by CHI EF II LP, or CHI EF. CHI II and CHI EF are collectively referred to as the Cowen Entities. CHI Advisors LLC is the investment adviser to the Cowen Entities and, in such capacity, exercises voting and investment power over the shares held by the Cowen Entities and may be deemed to be the beneficial owner of the shares held by the Cowen Entities. As managing partner of CHI Advisors LLC, Kevin J. Raidy, a member of our board of directors, may be deemed to share voting and investment power with respect to the shares held by the Cowen Entities. The Cowen Entities collectively hold more than 5% of our share capital.
- (3) Represents (i) 111,361 Series B preferred shares purchased by Versant V, (ii) 8,475 Series B preferred shares purchased by Versant V Canada, (iii) 3,708 Series B preferred shares purchased by Versant Ophthalmic, (iv) 3,350 Series B preferred shares purchased by Versant Affiliates V, (v) 875,568 Series B preferred shares purchased by Versant VI and (vi) 458,282 Series B preferred shares purchased by Versant Vantage I, L.P., or Versant Vantage. As described above, Dr. Davis may be deemed to share voting and investment power with respect to the shares held by each of Versant V, Versant V Canada, Versant Ophthalmic, Versant Affiliates V and Versant VI. Versant Vantage I GP, L.P. is the sole general partner of Versant Vantage and Versant Vantage I GP-GP, LLC is the sole general partner of Versant Vantage I GP,

[Table of Contents](#)

L.P. and has voting and dispositive control over the shares held by Versant Vantage. Dr. Davis is a managing director of Versant Vantage I GP-GP, LLC, and, as a result, may be deemed to share voting and investment power with respect to the shares held by Versant Vantage. The Versant Entities collectively hold more than 5% of our share capital.

- (4) Represents (i) 864,749 Series B preferred shares purchased by MPM 2014, (ii) 57,677 Series B preferred shares purchased by MPM B 2014 and (iii) 29,765 Series B preferred shares purchased by MPM LLC. Mr. Foley, a member of our board of directors, is a Managing Director of MPM BioVentures 2014 LLC, or BV2014 LLC. BV2014 LLC is the Managing Member of MPM BioVentures 2014 GP LLC, which is the General Partner of MPM 2014 and MPM B 2014. MPM LLC invests alongside MPM 2014 and MPM B 2014. As a result, Todd Foley may be deemed to share voting and investment power with respect to the shares held by each of the MPM Funds. The MPM Entities collectively hold more than 5% of our share capital.
- (5) UBS Oncology Impact Fund L.P. is a holder of more than 5% of our share capital.

Collaboration and License Agreement with Bristol-Myers Squibb Company

In May 2020, we entered into a collaboration and license agreement, or the agreement, with Bristol-Myers Squibb Company, or Bristol Myers Squibb, pursuant to which we and Bristol Myers Squibb have agreed to collaborate in the research and development of potential new product candidates. Under the terms of the agreement, Bristol Myers Squibb paid us an initial upfront fee payment of \$50.0 million. In connection with entering into the agreement, we entered into a warrant agreement with an affiliate of Bristol Myers Squibb, pursuant to which we issued a warrant which will be automatically exercised into our common shares at the subscription price of \$15.0 million divided by the initial public offering price of our common shares in this offering. Based on an assumed initial public offering price of \$19.00 per share, the midpoint of the range set forth on the cover page of this prospectus, it is anticipated that Bristol Myers Squibb will acquire 789,474 of our common shares upon the automatic exercise of the warrant in connection with the consummation of this offering. See “Business—Collaborations and License Agreements—Collaboration and License Agreement with Bristol-Myers Squibb Company” for more information.

Research Services

From September 2018 to February 2020, we engaged Inception Sciences Canada, Inc., an affiliate of Versant, a holder of more than 5% of our share capital, for certain research services. For the years ended December 31, 2018 and 2019 and the three months ended March 31, 2020, we recorded expenses to Inception Sciences Canada of \$321,989, \$1,180,284 and \$11,023 for such research services, respectively.

Registration Rights Agreement

We are party to an amended and restated registration rights agreement, or the registration rights agreement, dated September 3, 2019, with all holders of our preferred shares. The registration rights agreement provides that these holders are entitled to certain registration rights, including the right to demand that we file a registration statement or request that their shares be covered by a registration statement that we otherwise file. The registration rights will terminate upon the earliest of (i) the occurrence of certain mergers, amalgamations, consolidations, reorganizations, arrangements, business combinations or similar transactions that result in a change of control of our company, or a sale of all or substantially all of our assets, or a dissolution, liquidation or winding up of our company, (ii) three years after the completion of this offering or (iii) with respect to any particular holder, at such time that such holder can sell its preferred shares under Rule 144 of the Securities Act during any three-month period. For a description of the registration rights granted under the registration rights agreement, see the section titled “Description of Share Capital—Registration Rights.”

Shareholders’ Agreement

We are party to a second amended and restated unanimous shareholders’ agreement, or the shareholders’ agreement, dated September 3, 2019, with all of our shareholders. The shareholders’ agreement provides, among

[Table of Contents](#)

other things, that these holders will vote in accordance with the terms of the agreement, including in matters related to the composition of our board of directors, as well as for certain transfer restrictions, information rights and preemptive rights in favor of certain holders of our preferred shares with regard to certain issuances of our share capital. The shareholders' agreement will terminate upon the completion of this offering.

Employment Arrangements

We have entered into employment agreements with certain of our executive officers. For more information regarding these agreements with our named executive officers, see the sections titled "Executive Compensation—Agreements with our Named Executive Officers" and "Management."

Severance Arrangements

The employment agreements and offer letter agreements we have entered into with certain of our executive officers provide for certain severance arrangements. For more information regarding these arrangements with our named executive officers, see "Executive Compensation—Potential Payments upon Termination or Change of Control."

Executive and Director Compensation

We have granted options to certain of our executive officers and directors. See the sections titled "Non-Employee Director Compensation" and "Executive Compensation" for a description of these options

Indemnity Agreements

We have entered, and intend to continue to enter, into separate indemnity agreements with each of our directors and officers, in addition to the indemnification provided for in our bylaws. These indemnity agreements provide our directors and executive officers with contractual rights to indemnification and, in some cases, expense advancement in any action or proceeding arising out of their services as one of our directors or executive officers or as a director or executive officer of any other company or enterprise to which the person provides services at our request. For more information regarding these indemnity agreements, see "—Limitation on Liability and Indemnification Matters."

Related Party Transaction Policy

In connection with this offering, we intend to adopt a written related party transaction policy that sets forth our procedures for the identification, review, consideration and approval or ratification of related party transactions. This policy will become effective upon the effectiveness of the registration statement of which this prospectus is a part. For purposes of this policy only, a "related person transaction" is a transaction, arrangement or relationship (or any series of similar transactions, arrangements or relationships) in which we and any related person are participants involving an amount that exceeds \$120,000. Transactions involving compensation for services provided to us as an employee, consultant or director are not considered related-person transactions under this policy. A "related person" is any executive officer, director, nominee to become a director or a holder of more than 5% of our share capital, or any affiliate or member of the immediate family of the foregoing.

Under the policy, where a transaction has been identified as a related-person transaction, management will be required to present information regarding the proposed related-person transaction to our audit committee or, where review by our audit committee would be inappropriate due to a conflict of interest, to another independent body of our board of directors, for review. The presentation will need to include a description of, among other things, all of the parties, the direct and indirect interests of the related persons, the purpose of the transaction, the material facts, the benefits of the transaction to us and whether any alternative transactions are available, an assessment of whether the terms are comparable to the terms available from unrelated third parties and

[Table of Contents](#)

management's recommendation. To identify related-person transactions in advance, we will rely on information supplied by our executive officers, directors and certain significant shareholders. In considering related-person transactions, our audit committee or another independent body of our board of directors will take into account the relevant available facts and circumstances including, but not limited to:

- the risks, costs and benefits to us;
- the impact on a director's independence in the event the related person is a director, immediate family member of a director or an entity with which a director is affiliated;
- the terms of the transaction;
- the availability of other sources for comparable services or products; and
- the terms available to or from, as the case may be, unrelated third parties under the same or similar circumstances.

All of the transactions described in this section were entered into prior to the adoption of this policy. Although we have not had a written policy for the review and approval of transactions with related persons, our board of directors has historically reviewed and approved any transaction where a director or officer had a financial interest, including the transactions described above. Prior to approving such a transaction, the material facts as to a director's or officer's relationship or interest in the agreement or transaction were disclosed to our board of directors. Our board of directors took this information into account when evaluating the transaction and in determining whether such transaction was fair to us and in the best interest of all our shareholders.

PRINCIPAL SHAREHOLDERS

The following table sets forth information regarding beneficial ownership of our share capital as of March 31, 2020 by:

- each person, or group of affiliated persons, known by us to beneficially own more than 5% of our common shares;
- each of our directors;
- each of our named executive officers; and
- all of our current executive officers and directors as a group.

The percentage ownership information under the column titled “Before Offering” is based on 23,268,085 common shares outstanding as of March 31, 2020, assuming the conversion of all outstanding preferred shares into an aggregate of 21,558,393 common shares immediately prior to the completion of this offering. The percentage ownership information under the column titled “After Offering” is based on (i) the sale of 10,000,000 common shares in this offering (assuming an initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus) and (ii) the automatic exercise of the warrant held by an affiliate of Bristol Myers Squibb into an aggregate of 789,474 common shares (assuming an initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus). The percentage ownership information assumes no exercise of the underwriters’ option to purchase additional shares and no purchases of any common shares in this offering by the beneficial owners identified in the table below.

Information with respect to beneficial ownership has been furnished by each director, officer or beneficial owner of more than 5% of our common shares. We have determined beneficial ownership in accordance with the rules of the SEC. These rules generally attribute beneficial ownership of securities to persons who possess sole or shared voting power or investment power with respect to those securities. In addition, the rules include common shares issuable pursuant to the exercise of options that are either immediately exercisable or exercisable within 60 days of March 31, 2020. These shares are deemed to be outstanding and beneficially owned by the person holding those options for the purpose of computing the percentage ownership of that person, but they are not treated as outstanding for the purpose of computing the percentage ownership of any other person. Unless otherwise indicated, the persons or entities identified in this table have sole voting and investment power with respect to all shares shown as beneficially owned by them, subject to applicable community property laws.

Except as otherwise noted below, the address for each person or entity listed in the table is c/o Repare Therapeutics Inc., 7210 Frederick-Banting, Suite 100, St-Laurent, Québec, Canada H4S 2A1.

	NUMBER OF SHARES BENEFICIALLY OWNED	PERCENTAGE OF SHARES BENEFICIALLY OWNED	
		BEFORE OFFERING	AFTER OFFERING
5% Shareholders:			
Entities affiliated with Versant ⁽¹⁾	7,004,175	30.1%	20.6%
Entities affiliated with MPM ⁽²⁾	2,753,772	11.8	8.1
OrbiMed Private Investments VII, L.P. ⁽³⁾	2,601,325	11.2	7.6
UBS Oncology Impact Fund, L.P. ⁽⁴⁾	2,138,337	9.2	6.3
Entities affiliated with Cowen ⁽⁵⁾	1,903,408	8.2	5.6
Fonds de solidarité des travailleurs et travailleuses du Québec ⁽⁶⁾	1,753,889	7.5	5.1
Redmile Biopharma Investments II, L.P. ⁽⁷⁾	1,586,174	6.8	4.7
Named Executive Officers and Directors:			
Lloyd M. Segal ⁽⁸⁾	438,352	1.9%	1.3%
Michael Zinda, Ph.D. ⁽⁹⁾	120,646	*	*
Maria Koehler, M.D., Ph.D. ⁽¹⁰⁾	48,458	*	*
Katina Dorton ⁽¹¹⁾	64,953	*	*

[Table of Contents](#)

	NUMBER OF SHARES BENEFICIALLY OWNED	PERCENTAGE OF SHARES BENEFICIALLY OWNED	
		BEFORE OFFERING	AFTER OFFERING
Jerel Davis, Ph.D.(1)	7,004,173	30.1	20.6
David Bonita, M.D.(3)	2,601,325	11.2	7.6
Todd Foley(2)	2,753,772	11.8	8.1
Samarth Kulkarni	—	—	—
Briggs Morrison, M.D.(12)	33,439	*	*
Kevin Raidy(5)	1,903,408	8.2	5.6
Ann Rhoads(13)	—	—	—
Carol Schafer(14)	11,066	*	*
All current executive officers and directors as a group (12 persons)(15)	14,914,641	63.0	43.3

* Represents beneficial ownership of less than 1%.

- (1) Consists of (a)(i) 651,462 common shares, (ii) 2,054,198 common shares issuable upon the conversion of Class A preferred shares and (iii) 111,361 common shares issuable upon the conversion of Class B preferred shares held by Versant Venture Capital V, L.P., or Versant V; (b)(i) 49,580 common shares, (ii) 156,335 common shares issuable upon the conversion of Class A preferred shares and (iii) 8,475 common shares issuable upon the conversion of Class B preferred shares held by Versant Venture Capital V (Canada) LP, or Versant V Canada; (c)(i) 21,692 common shares, (ii) 68,398 common shares issuable upon the conversion of Class A preferred shares and (iii) 3,708 common shares issuable upon the conversion of Class B preferred shares held by Versant Ophthalmic Affiliates Fund I, L.P., or Versant Ophthalmic; (d)(i) 19,596 common shares, (ii) 61,791 common shares issuable upon the conversion of Class A preferred shares and (iii) 3,350 common shares issuable upon the conversion of Class B preferred shares held by Versant Affiliates Fund V, L.P., or Versant Affiliates V; (e)(i) 2,443,883 common shares issuable upon the conversion of Class A preferred shares and (ii) 875,568 common shares issuable upon the conversion of Class B preferred shares held by Versant Venture Capital VI, L.P., or Versant VI; (f) 458,282 common shares issuable upon the conversion of Class B preferred shares held by Versant Vantage I, L.P., or Versant Vantage; and (g) 16,496 common shares held by one individual associated with Versant Venture Management, LLC or VVM. VVM, Versant V, Versant V Canada, Versant Ophthalmic, Versant Affiliates V, Versant VI and Versant Vantage are collectively referred to as the Versant Entities. Versant Ventures V, LLC is the general partner of each of Versant V, Versant Ophthalmic and Versant Affiliates V and has voting and dispositive control over the shares held by such entities. Versant Ventures V (Canada), L.P. is the general partner of Versant V Canada and Versant Ventures V GP-GP (Canada), Inc. is the sole general partner of Versant Ventures V (Canada), L.P. and has voting and dispositive control over the shares held by Versant V Canada. Dr. Davis, Brad Bolzon, Tom Woiwode, William Link, Samuel Colella, Kirk Nielsen and Robin Praeger, the managing directors of Versant Ventures V, LLC and the directors of Versant Ventures V GP-GP (Canada), Inc., may be deemed to possess voting and dispositive control over the shares held by Versant V, Versant V Canada, Versant Ophthalmic and Versant Affiliates V and may be deemed to have indirect beneficial ownership of the shares held by Versant V, Versant V Canada, Versant Ophthalmic and Versant Affiliates V but disclaims beneficial ownership of such securities, except to the extent of their respective pecuniary interest therein, if any. Versant Ventures VI GP, L.P. is the sole general partner of Versant VI and Versant Ventures VI GP-GP, LLC is the sole general partner of Versant Ventures VI GP, L.P. and has voting and dispositive control over the shares held by Versant VI. Dr. Davis, Brad Bolzon, Tom Woiwode, Clare Ozawa, Kirk Nielsen and Robin Praeger, the managing directors of Versant Ventures VI GP-GP, LLC, may be deemed to possess voting and dispositive control over the shares held by Versant VI and may be deemed to have indirect beneficial ownership of the shares held by Versant VI but disclaims beneficial ownership of such securities, except to the extent of their respective pecuniary interest therein, if any. Versant Vantage I GP, L.P. is the sole general partner of Versant Vantage and Versant Vantage I GP-GP, LLC is the sole general partner of Versant Vantage I GP, L.P. and has voting and dispositive control over the shares held by Versant Vantage. Dr. Davis, Brad Bolzon, Tom Woiwode, Clare Ozawa and Robin Praeger, the managing directors

Table of Contents

- of Versant Vantage I GP-GP, LLC, may be deemed to possess voting and dispositive control over the shares held by Versant Vantage and may be deemed to have indirect beneficial ownership of the shares held by Versant Vantage but disclaims beneficial ownership of such securities, except to the extent of their respective pecuniary interest therein, if any. The address for the Versant Entities is One Sansome Street, Suite 3630, San Francisco, CA 94104.
- (2) Consists of (a)(i) 1,636,136 common shares issuable upon the conversion of Class A preferred shares and (ii) 864,749 common shares issuable upon the conversion of Class B preferred shares held by MPM Bioventures 2014, L.P., or MPM 2014; (b)(i) 109,128 common shares issuable upon the conversion of Class A preferred shares and (ii) 57,677 common shares issuable upon the conversion of Class B preferred shares held by MPM Bioventures 2014 (B), L.P., or MPM B 2014; and (c)(i) 56,317 common shares issuable upon the conversion of Class A preferred shares and (ii) 29,765 common shares issuable upon the conversion of Class B preferred shares held by MPM Asset Management Investors BV2014 LLC, or MPM LLC. MPM 2014, MPM B 2014 and MPM LLC are collectively referred to as the MPM Entities. Todd Foley, a member of our board of directors, Luke Evin and Ansbert Gadicke and are managing directors of MPM BioVentures 2014 LLC, or BV2014 LLC. BV2014 LLC is the Managing Member of MPM BioVentures 2014 GP LLC, which is the General Partner of MPM 2014 and MPM B 2014. MPM LLC invests alongside MPM 2014 and MPM B 2014. Each of Drs. Evin and Gadicke and Mr. Foley shares power to vote, acquire, hold and dispose of the shares held by each of the MPM Entities. Each of the entities and individuals listed above expressly disclaims beneficial ownership of the securities listed above except to the extent of any pecuniary interest therein. The address of each of the MPM Entities is 450 Kendall Street, Cambridge, MA 02142.
- (3) Consists of 2,601,325 common shares issuable upon the conversion of Class B preferred shares held by OrbiMed Private Investments VII, L.P., or OrbiMed. OrbiMed Advisors LLC, or Advisors, is the managing member of OrbiMed Capital GP VII LLC, or GP VII. GP VII is the general partner of OrbiMed. David Bonita, M.D., a member of our board of directors, is a member of Advisors. By virtue of such relationships, GP VII and Advisors may be deemed to have voting power and investment power over the securities held by OrbiMed and as a result, may be deemed to have beneficial ownership over such securities. Advisors exercises voting and investment power through a management committee comprised of Carl L. Gordon, Sven H. Borho, and Jonathan T. Silverstein, each of whom disclaims beneficial ownership of the shares held by OrbiMed. OrbiMed holds more than 5% of our share capital prior to this offering. The address of OrbiMed is 601 Lexington Avenue, 54th Floor, New York, NY 10022.
- (4) Consists of (i) 1,801,580 common shares issuable upon the conversion of Class A preferred shares and (ii) 336,757 common shares issuable upon the conversion of Class B preferred shares held by UBS Oncology Impact Fund, L.P. The general partner of UBS Oncology Impact Fund, L.P. is Oncology Impact Fund (Cayman) Management L.P. The general partner of Oncology Impact Fund (Cayman) Management L.P. is MPM Oncology Impact Management LP. The general partner of MPM Oncology Impact Management LP is MPM Oncology Impact Management GP LLC. Ansbert Gadicke is a Managing Member and the Managing Director of MPM Oncology Impact Management GP LLC and has voting and dispositive power over the shares held by UBS Oncology Impact Fund, L.P. The address of UBS Oncology Impact Fund, L.P. is Durell House, 28 New Street, St Helier, Jersey, JE1 4FS.
- (5) Consists of (a) 1,773,210 common shares issuable upon the conversion of Class B preferred shares held by Cowen Healthcare Investments II LP, or CHI II, and (b) 130,198 common shares issuable upon the conversion of Class B preferred shares held by CHI EF II LP, or CHI EF. CHI II and CHI EF are collectively referred to as the Cowen Entities. CHI Advisors LLC is the investment adviser to the Cowen Entities and, in such capacity, exercises voting and investment power over the shares held by the Cowen Entities and may be deemed to be the beneficial owner of the shares held by the Cowen Entities. As managing partner of CHI Advisors LLC, Kevin J. Raidy, a member of our board of directors, may be deemed to share voting and investment power with respect to the shares held by the Cowen Entities. Mr. Raidy disclaims beneficial ownership of the shares held by CHI II and CHI EF II LP, except to the extent of any actual pecuniary interest. The address of each of the Cowen Entities is CHI Advisors LLC, 599 Lexington Avenue, 19th Floor, New York, NY 10022.

Table of Contents

- (6) Consists of (a) 1,370,767 common shares issuable upon the conversion of Class A preferred shares held by Fonds de solidarité des travailleurs et travailleuses du Québec, or FTQ, and (b) 383,122 common shares issuable upon the conversion of Class B preferred shares held by FTQ. The FTQ investment committee, consisting of Christine Beaubien, Anouk Collet, Loïc Breton, Chantal Laberge, Hubert Manseau, Roger A. Renaud, Michelle Savoie and Jacques Simard, may be deemed to have voting and dispositive power over the common shares held by FTQ. Investment decisions with respect to the common shares held by FTQ can be made by its investment committee. The address of FTQ is 545 Blvd. Crémazie East, Suite 200, Montréal (QC) Canada, H2M 2W4.
- (7) Consists of 1,586,174 common shares issuable upon the conversion of Class B preferred shares held by Redmile Biopharma Investments II, L.P. Redmile Group, LLC is the investment manager to Redmile Biopharma Investments II, L.P. and, in such capacity, exercises shared voting and investment power over the shares held by Redmile Biopharma Investments II, L.P. and may be deemed to beneficially own such shares. Jeremy Green serves as the managing member of Redmile Group, LLC, and as such shares voting and dispositive power over the shares held by Redmile Biopharma Investments II, L.P. Redmile Group, LLC and Mr. Green each disclaim beneficial ownership of these shares, except to the extent of its or his pecuniary interest in such shares, if any. The address of the above person and entities is Letterman Digital Arts Center, One Letterman Drive, Suite D3-300, San Francisco, CA 94129.
- (8) Consists of (a) 148,466 common shares held by Mr. Segal and (b) 289,886 common shares issuable upon the exercise of options granted to Mr. Segal that are exercisable within 60 days of March 31, 2020.
- (9) Consists of (a) 85,229 common shares held by Dr. Zinda and (b) 35,417 common shares issuable upon the exercise of options granted to Dr. Zinda that are exercisable within 60 days of March 31, 2020.
- (10) Consists of 48,458 common shares issuable upon the exercise of options granted to Dr. Koehler that are exercisable within 60 days of March 31, 2020.
- (11) Consists of 64,953 common shares held by Ms. Dorton. Ms. Dorton's employment was terminated effective October 10, 2019.
- (12) Consists of 33,439 common shares issuable upon the exercise of options granted to Dr. Morrison that are exercisable within 60 days of March 31, 2020.
- (13) Ms. Rhoads joined our board of directors in June 2020.
- (14) Consists of 11,066 common shares issuable upon the exercise of options granted to Ms. Schafer that are exercisable within 60 days of March 31, 2020.
- (15) Consists of (i) 992,521 common shares, (ii) 6,586,186 common shares issuable upon the conversion of Class A preferred shares, (iii) 6,917,668 common shares issuable upon the conversion of Class B preferred shares and (iv) 418,263 common shares issuable upon the exercise of options. The shares held by Ms. Dorton have been excluded as she is not a current executive officer.

DESCRIPTION OF SHARE CAPITAL

The following description of our share capital, certain provisions of our articles of continuance and amended and restated bylaws, as each will be in effect upon the closing of this offering, and certain provisions of Québec law are summaries. You should also refer to the articles of continuance and the amended and restated bylaws, which are filed as exhibits to the registration statement of which this prospectus is part.

General

Following the completion of this offering, based upon shares outstanding as of March 31, 2020 and assuming (i) the conversion of all outstanding preferred shares and (ii) the automatic exercise of the warrant held by an affiliate of Bristol-Myers Squibb Company, or Bristol Myers Squibb, into an aggregate of 789,474 common shares, based on an assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, in each case effected immediately prior to the completion of this offering, our share capital will consist of an unlimited number of common shares, no par value per share, of which 34,057,559 shares will be issued and outstanding, and an unlimited number of preferred shares, no par value per share, none of which will be issued and outstanding.

Common Shares

Outstanding Shares

As of March 31, 2020, we had 24,057,559 common shares outstanding, which were held by approximately 35 shareholders of record, assuming (i) the conversion of all outstanding preferred shares into 21,558,393 common shares and (ii) the automatic exercise of the warrant held by an affiliate of Bristol Myers Squibb into an aggregate of 789,474 common shares, based on an assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, in each case effected immediately prior to the completion of this offering.

Voting Rights

Under our articles of continuance to be in effect following the completion of this offering, the holders of common shares will be entitled to one vote for each share held at any meeting of the shareholders.

Dividends

Subject to the prior rights of the holders of our preferred shares, the holders of common shares will be entitled to receive dividends as and when declared by our board of directors. See "Dividend Policy."

Liquidation

Subject to the prior payment to the holders of our preferred shares, in the event of our liquidation, dissolution or winding-up or other distribution of our assets among our shareholders, the holders of common shares will be entitled to share *pro rata* in the distribution of the balance of our assets.

Rights and Preferences

The holders of common shares will have no preemptive, conversion rights or other subscription rights. There will be no redemption or sinking fund provisions applicable to our common shares. There will be no provision in our articles of continuance to be in effect following the closing of this offering requiring the holders of common shares to contribute additional capital or permitting or restricting the issuance of additional securities or any other material restrictions. The rights, preferences and privileges of the holders of common shares will be subject to and may be adversely affected by, the rights of the holders of any series of preferred shares that we may designate in the future.

Preferred Shares

Upon the completion of this offering, all outstanding preferred shares will convert into common shares on a one-to-one basis. As of March 31, 2020, we had 21,558,393 preferred shares outstanding, held of record by 22 shareholders. Under our articles of continuance to be in effect following the completion of this offering, we will be authorized to issue, without shareholder approval, an unlimited number of preferred shares, issuable in one or more series, and, subject to the provisions of the QBCA, having such designations, rights, privileges, restrictions and conditions, including dividend and voting rights, as our board of directors may determine, and such rights and privileges, including dividend and voting rights, may be superior to those of the common shares. The issuance of preferred shares, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in control of our company and might adversely affect the market price of our common shares and the voting and other rights of the holders of common shares. We have no current plans to issue any preferred shares following the completion of this offering.

Options

As of March 31, 2020, 3,323,801 common shares were issuable upon the exercise of outstanding share options, at a weighted-average exercise price of \$2.09 per common share. For additional information regarding terms of our equity incentive plans, see the section titled “Executive and Director Compensation—Equity Incentive Plans.”

Warrant

In May 2020, in connection with our entry into a collaboration and license agreement with Bristol Myers Squibb, we entered into a warrant agreement with an affiliate of Bristol Myers Squibb. Pursuant to the terms of the warrant agreement, Bristol Myers Squibb paid us \$15 million in consideration for our issuance of a warrant. Immediately prior to the completion of this offering, the warrant will be automatically exercised for a number of our common shares equal to the subscription price of \$15 million divided by the initial public offering price of our common shares set forth on the cover page of this prospectus; *provided that*, in the event that either the offering is not consummated by December 31, 2020 or we deliver to Bristol Myers Squibb a written notice to the effect that we are no longer pursuing this proposed offering, the warrant will be automatically exercised for a specified number of preferred shares. Based on an assumed initial public offering price of \$19.00 per share, the midpoint of the range set forth on the cover page of this prospectus, it is anticipated that Bristol Myers Squibb will acquire 789,474 of our common shares upon the automatic exercise in connection with the consummation of this offering.

Registration Rights

Upon the completion of this offering, holders of the common shares issued upon the conversion of our preferred shares, including any accrued dividends thereon, as well as BMS Strategic Portfolio Investments Holdings, Inc., an affiliate of Bristol Myers Squibb, with respect to the common shares issuable to it upon automatic exercise of its warrant, will be entitled to certain rights with respect to registration of such shares under the Securities Act, pursuant to the terms of the registration rights agreement by and among us and certain of our holders. We refer to these shares as registrable securities. The registration of common shares pursuant to the exercise of the registration rights described below would enable the holders to trade these shares without restriction under the Securities Act when the applicable registration statement is declared effective.

We will pay the registration expenses, other than underwriting fees, selling commissions and share transfer taxes for the shares registered pursuant to the demand, piggyback and short-form registrations described below. Expenses relating to underwriting fees, selling commissions and share transfer taxes for the shares registered will be borne by us and the participating holders in proportion to the number of common shares sold by each, or, as between the participating holders, as such participating holders may otherwise agree.

[Table of Contents](#)

As of March 31, 2020, holders of an aggregate of 22,300,723 registrable securities were entitled to these demand, piggyback and short-form registration rights. Under the terms of the registration rights agreement, holders of registrable securities will have equivalent registration rights with respect to any of our common shares acquired by these holders. Upon completion of this offering, BMS Strategic Portfolio Investments Holdings, Inc., an affiliate of Bristol Myers Squibb, will become party to the registration rights agreement, such that an aggregate of 789,474 registrable securities held by BMS Strategic Portfolio Investments Holdings, Inc. will be subject to the registration rights set forth in the registration rights agreement, which assumes that the warrant is automatically exercised into an aggregate of 789,474 common shares, based on an assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus.

Demand Registration Rights

At any time beginning 180 days following the effective date of the registration statement of which this prospectus forms a part, the holders of at least a majority of the registrable securities then outstanding have the right to make up to two demands that we file a registration statement under the Securities Act, subject to specified conditions and exceptions.

Piggyback Registration Rights

If we register any securities for public sale, the holders of our registrable securities then outstanding will each be entitled to notice of the registration and will have the right to include their shares in the registration statement, subject to specified exceptions. The underwriters of any underwritten offering will have the right to limit the number of shares having registration rights to be included in such registration statement, but not below 30% of the total amount of securities included in such registration.

Short-Form Registration Rights

At any time beginning 180 days following the effective date of the registration statement of which this prospectus forms a part, if we are eligible to file a registration statement on Form S-3 under the Securities Act or Form 44-101F1 under National Instrument 44-101 of the Canadian Securities Administrators, as applicable, the holders of our registrable securities then outstanding will have the right to demand that we file a registration statement on Form S-3 or Form 44-101F1, as applicable, provided that the aggregate amount of securities to be sold under such short-form registration statement is at least \$5.0 million. We are not obligated to effect a demand for registration on Form S-3 or Form 44-101 by holders of our registrable securities more than two times during any 12-month period. The right to have such shares registered on Form S-3 or Form 44-101 is further subject to other specified conditions and limitations.

Termination of Registration Rights

The demand, piggyback and short-form registration rights described below will expire upon the earliest of (i) the occurrence of certain mergers, amalgamations, consolidations, reorganizations, arrangements, business combinations or similar transactions that result in a change of control, or a sale of all or substantially all of our assets, or a dissolution, liquidation or winding up of our company, (ii) three years after the completion this offering or (iii) with respect to any particular holder, at such time that such holder can sell its preferred shares under Rule 144 of the Securities Act during any three-month period.

Indemnification

The registration rights agreement contains customary cross-indemnification provisions, pursuant to which we are obligated to indemnify the selling shareholders in the event of material misstatements or omissions in the registration statement attributable to us, and they are obligated to indemnify us for material misstatements or omissions in the registration statement attributable to them.

Choice of Forum

Our amended and restated bylaws to be in effect following the completion of this offering will provide that the courts of the Province of Québec and the appellate courts therefrom shall, to the fullest extent permitted by law, be the sole and exclusive forum for: (i) any derivative action or proceeding brought on our behalf; (ii) any action or proceeding asserting a claim for breach of a fiduciary duty owed to us by any of our directors, officers or other employees; (iii) any action or proceeding asserting a claim arising pursuant to any provision of the Business Corporations Act (Québec) or our articles or by-laws (as either may be amended from time to time); or (iv) any action or proceeding asserting a claim otherwise related to our affairs, provided that, the exclusive forum provision will not apply to suits brought to enforce any liability or duty created by the Securities Act, the Exchange Act or any other claim for which the U.S. federal courts have exclusive jurisdiction. Our amended and restated bylaws to be in effect following the completion of this offering further provide that unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States of America shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act. It is possible that a court of law could rule that the choice of forum provision contained in our amended and restated bylaws is inapplicable or unenforceable if it is challenged in a proceeding or otherwise. For example, under the Securities Act, federal courts have concurrent jurisdiction over all suits brought to enforce any duty or liability created by the Securities Act, and investors cannot waive compliance with the federal securities laws and the rules and regulations thereunder.

Transfer Agent and Registrar

The transfer agent and registrar for our common shares will be Computershare Investor Services Inc. The transfer agent's address is 1500 Robert-Bourassa Boulevard, 7th Floor, Montréal, Québec H3A 3S8.

Nasdaq Global Select Market Listing

Our common shares have been approved for listing on the Nasdaq Global Select Market under the symbol "RPTX."

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there has been no public market for our common shares, and a liquid trading market for our common shares may not develop or be sustained after this offering. Future sales of our common shares, including shares issued upon the exercise of outstanding options, in the public market after the completion of this offering, or the perception that those sales may occur, could adversely affect the prevailing market price for our common shares from time to time or impair our ability to raise equity capital in the future. As described below, only a limited number of our common shares will be available for sale in the public market for a period of several months after the completion of this offering due to contractual and legal restrictions on resale described below. Future sales of our common shares in the public market either before or after restrictions lapse, or the perception that those sales may occur, could adversely affect the prevailing market price of our common shares at such time and our ability to raise equity capital at a time and price we deem appropriate.

Sale of Restricted Shares

Based on the number of common shares outstanding as of March 31, 2020, upon the closing of this offering and assuming (i) the conversion of our outstanding preferred shares into an aggregate of 21,558,393 common shares immediately prior to the completion of this offering, (ii) the automatic exercise of the warrant held by an affiliate of Bristol Myers Squibb into an aggregate of 789,474 common shares immediately prior to the completion of this offering, based on an assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, (iii) no exercise of the underwriters' option to purchase additional common shares, and (iv) no exercise of outstanding options, we will have 34,057,559 outstanding common shares as of such date. Of these shares, all of the 10,000,000 common shares to be sold in this offering will be freely tradable in the public market without restriction or further registration under the Securities Act, unless the shares are held by any of our "affiliates" as such term is defined in Rule 144 of the Securities Act, or Rule 144 or subject to lock-up agreements. All remaining common shares held by existing shareholders immediately prior to the consummation of this offering will be "restricted securities," as such term is defined in Rule 144. These restricted securities were issued and sold by us in private transactions and are eligible for public sale only if registered under the Securities Act or if they qualify for an exemption from registration under the Securities Act, including the exemptions provided by Rule 144 or Rule 701 of the Securities Act, or Rule 701, which rules are summarized below.

As a result of the lock-up agreements referred to below and the provisions of Rule 144 and Rule 701 under the Securities Act, based on the number of our common shares outstanding as of March 31, 2020, the common shares (excluding the shares sold in this offering) that will be available for sale in the public market are as follows:

<u>Approximate Number of Shares</u>	<u>First Date Available for Sale into Public Market</u>
24,057,559 shares	181 days after the date of this prospectus, upon expiration of the lock-up agreements referred to below, subject in some cases to applicable volume, manner of sale and other limitations under Rule 144 and Rule 701.

We may issue common shares from time to time as consideration for future acquisitions, investments or other corporate purposes. In the event that any such acquisition, investment or other transaction is significant, the number of common shares that we may issue may in turn be significant. We may also grant registration rights covering those common shares issued in connection with any such acquisition and investment.

In addition, the common shares reserved for future issuance under our 2020 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, a registration statement under the Securities Act or an exemption from registration, including Rule 144 and Rule 701.

Rule 144

In general, persons who have beneficially owned restricted common shares for at least six months, and any affiliate of the company who owns common shares, are entitled to sell their securities without registration with the SEC under an exemption from registration provided by Rule 144.

[Table of Contents](#)

Under Rule 144, as currently in effect, once we have been subject to the public company reporting requirements of the Exchange Act for at least 90 days, and we are current in our Exchange Act reporting at the time of sale, a person (or persons whose shares are required to be aggregated) who is not deemed to have been one of our “affiliates” for purposes of Rule 144 at any time during the 90 days preceding a sale and who has beneficially owned restricted securities within the meaning of Rule 144 for at least six months, including the holding period of any prior owner other than one of our “affiliates,” is entitled to sell those shares in the public market (subject to the lock-up agreement referred to below, if applicable) without complying with the manner of sale, volume limitations or notice provisions of Rule 144, but subject to compliance with the public information requirements of Rule 144. If such a person has beneficially owned the shares proposed to be sold for at least one year, including the holding period of any prior owner other than “affiliates,” then such person is entitled to sell such shares in the public market without complying with any of the requirements of Rule 144 (subject to the lock-up agreement referred to above, if applicable).

In general, under Rule 144, as currently in effect, once we have been subject to the public company reporting requirements of the Exchange Act for at least 90 days, our “affiliates,” as defined in Rule 144, who have beneficially owned the shares proposed to be sold for at least six months, are entitled to sell in the public market, upon expiration of any applicable lock-up agreements and within any three-month period, a number of those common shares that does not exceed the greater of:

- 1% of the number of common shares then outstanding, which will equal approximately _____ common shares immediately upon the completion of this offering (calculated as of March 31, 2020 on the basis of the assumptions described above and assuming no exercise of the underwriter’s option to purchase additional shares and no exercise of outstanding options); or
- the average weekly trading volume of our common shares on Nasdaq during the four calendar weeks preceding the filing of a notice on Form 144 with respect to such sale.

Such sales under Rule 144 by our “affiliates” or persons selling shares on behalf of our “affiliates” are also subject to certain manner of sale provisions, notice requirements and to the availability of current public information about us. Notwithstanding the availability of Rule 144, the holders of substantially all of our restricted securities have entered into lock-up agreements as referenced above and their restricted securities will become eligible for sale (subject to the above limitations under Rule 144) upon the expiration of the restrictions set forth in those agreements.

Rule 701

In general, under Rule 701 as currently in effect, any of our employees, directors, officers, consultants or advisors who acquired common shares from us in connection with a written compensatory share or option plan or other written agreement in compliance with Rule 701 before the effective date of the registration statement of which this prospectus is a part (to the extent such common shares are not subject to a lock-up agreement) and who are not our “affiliates” as defined in Rule 144 during the immediately preceding 90 days, is entitled to rely on Rule 701 to resell such shares beginning 90 days after the date of this prospectus in reliance on Rule 144, but without complying with the notice, manner of sale, public information requirements or volume limitation provisions of Rule 144. Persons who are our “affiliates” may resell those shares beginning 90 days after the date of this prospectus without compliance with Rule 144’s minimum holding period requirements (subject to the terms of the lock-up agreement referred to below, if applicable).

Lock-Up Agreements

In connection with this offering, we, our directors, our executive officers and holders of substantially all of our outstanding common shares or securities convertible into or exchangeable for common shares, have agreed, subject to certain exceptions, with the underwriters not to directly or indirectly offer, sell, contract to sell, pledge, grant any option to purchase, make any short sale or otherwise dispose of or hedge any common shares or any

[Table of Contents](#)

options to purchase common shares, or any securities convertible into or exchangeable for common shares during the period from the date of the lock-up agreement continuing through the date 180 days after the date of this prospectus, except with the prior written consent of Morgan Stanley & Co. LLC, Goldman Sachs & Co. LLC and Cowen and Company, LLC may waive the restrictions contained in such lock-up agreements at any time in their sole discretion. See the section entitled “Underwriting” appearing elsewhere in this prospectus for more information. These agreements are described in the section titled “Underwriting.”

Prior to the completion of the offering, certain of our employees, including our executive officers, and/or directors, may enter into written trading plans that are intended to comply with Rule 10b5-1 under the Exchange Act. Sales under these trading plans would not be permitted until the expiration of the lock-up agreements relating to the offering described above.

Following the lock-up periods set forth in the agreements described above, and assuming that the representatives of the underwriters do not release any parties from these agreements and that there is no extension of the lock-up period, all of the common shares that are restricted securities or are held by our affiliates as of the date of this prospectus will be eligible for sale in the public market in compliance with Rule 144.

Registration Rights

Upon the completion of this offering, the holders of 23,090,197 common shares, which gives effect to (i) the conversion of all outstanding preferred shares into an aggregate of 21,558,393 common shares and (ii) the automatic exercise of the warrant held by an affiliate of Bristol Myers Squibb into an aggregate of 789,474 common shares, based on an assumed initial public offering price of \$19.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, in each case effected immediately prior to the completion of this offering, will be entitled to rights with respect to the registration of their shares under the Securities Act, subject to the lock-up agreements described under “—Lock-Up Agreements” above. Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act, except for shares purchased by affiliates, immediately upon the effectiveness of the registration statement of which this prospectus is a part. Any sales of securities by these shareholders could have a material adverse effect on the trading price of our common shares. See the section titled “Description of Share Capital—Registration Rights.”

Equity Incentive Plans

We intend to file with the SEC a registration statement on Form S-8 under the Securities Act covering the common shares reserved for issuance under our equity incentive plans. The registration statement on Form S-8 is expected to be filed and become effective as soon as practicable after the completion of this offering. Accordingly, shares registered under the registration statement will be available for sale in the open market following its effective date, subject to Rule 144 volume limitations and the lock-up agreements described above, if applicable.

MATERIAL DIFFERENCES BETWEEN THE BUSINESS CORPORATIONS ACT (QUÉBEC) AND THE DELAWARE GENERAL CORPORATION LAW

Immediately prior to the completion of the offering, we will file articles of continuance such that we will be governed by the Business Corporations Act (Québec), or the QBCA, which is generally similar to laws applicable to U.S. corporations. Significant differences between the QBCA and the Delaware General Corporation Law, or DGCL, which governs companies incorporated in the State of Delaware, include the differences summarized below. This summary is not an exhaustive review of the two statutes, and reference should be made to the full text of both statutes for particulars of the differences.

	<u>Delaware</u>	<u>QBCA</u>
<i>Number and Election of Directors</i>	Under the DGCL, the board of directors must consist of at least one director. The number of directors shall be fixed by the bylaws of the corporation, unless the certificate of incorporation fixes the number of directors, in which case a change in the number of directors shall only be made by an amendment of the certificate of incorporation. Under the DGCL, directors are elected at annual stockholder meetings by plurality vote of the stockholders, unless a shareholder-adopted bylaw prescribes a different required vote.	Under the QBCA, the board of directors of a corporation whose securities are publicly traded must consist of at least three members, at least two of whom must not be officers or employees of the corporation or an affiliate of the corporation, so long as the corporation remains a “reporting issuer” for purposes of the QBCA, which includes a corporation that has made a distribution of securities to the public. Under the QBCA, directors are elected by the shareholders, in the manner and for the term, not exceeding three years, set out in the corporation’s bylaws.
<i>Constitution and Residency of Directors</i>	The DGCL does not have residency requirements, but a corporation may prescribe qualifications for directors under its certificate of incorporation or bylaws.	The QBCA does not have residency requirements.
<i>Removal of Directors</i>	Under the DGCL, any director or the entire board of directors may be removed, with or without cause, by the holders of a majority of the shares then entitled to vote at an election of directors, except (i) unless the certificate of incorporation provides otherwise, in the case of a corporation whose board of directors is classified, stockholders may effect such removal only for cause, or (ii) in the case of a corporation having cumulative voting, if less than the entire board of directors is to be removed, no director may be removed without cause if the votes cast against his removal would be sufficient to elect him if then	Under the QBCA, unless the articles of a corporation provide for cumulative voting (which is not the case for us), shareholders of the corporation may, by resolution passed by a majority of the votes cast thereon at a special meeting of shareholders, remove any or all directors from office and may elect any qualified person to fill the resulting vacancy.

	<u>Delaware</u>	<u>QBCA</u>
	<p>cumulatively voted at an election of the entire board of directors, or, if there are classes of directors, at an election of the class of directors of which he is a part.</p>	
<i>Vacancies on the Board of Directors</i>	<p>Under the DGCL, vacancies and newly created directorships may be filled by a majority of the directors then in office (even though less than a quorum) or by a sole remaining director unless (i) otherwise provided in the certificate of incorporation or bylaws of the corporation or (ii) the certificate of incorporation directs that a particular class of stock is to elect such director, in which case a majority of the other directors elected by such class, or a sole remaining director elected by such class, will fill such vacancy.</p>	<p>Under the QBCA, vacancies that exist on the board of directors may generally be filled by the board if the remaining directors constitute a quorum. In the absence of a quorum, the remaining directors shall call a meeting of shareholders to fill the vacancy.</p>
<i>Board of Director Quorum and Vote Requirements</i>	<p>Under the DGCL, a majority of the total number of directors shall constitute a quorum for the transaction of business unless the certificate of incorporation or bylaws require a greater number. The bylaws may lower the number required for a quorum to one-third the number of directors, but no less.</p> <p>Under the DGCL, the board of directors may take action by the majority vote of the directors present at a meeting at which a quorum is present unless the certificate of incorporation or bylaws require a greater vote.</p>	<p>Under the QBCA, subject to the corporation's bylaws, a majority of the directors in office constitutes a quorum at any meeting of the board. Our bylaws also provide that a majority of the directors in office constitutes a quorum at any meeting of the board.</p> <p>Under the QBCA, a quorum of directors may exercise all the powers of the directors despite any vacancy on the board.</p>
<i>Transactions with Directors and Officers</i>	<p>The DGCL generally provides that no transaction between a corporation and one or more of its directors or officers, or between a corporation and any other corporation or other organization in which one or more of its directors or officers, are directors or officers, or have a financial interest, shall be void or voidable solely for this reason, or solely because the director or officer is present at or participates in the</p>	<p>Under the QBCA, every director or officer of a corporation must disclose the nature and value of any interest he or she has in a contract or transaction to which the corporation is a party. For the purposes of this rule, "interest" means any financial stake in a contract or transaction that may reasonably be considered likely to influence decision-making. Furthermore, a proposed contract or a proposed</p>

<u>Delaware</u>	<u>QBCA</u>
<p>meeting of the board or committee which authorizes the transaction, or solely because any such director's or officer's votes are counted for such purpose, if (i) the material facts as to the director's or officer's interest and as to the transaction are known to the board of directors or the committee, and the board or committee in good faith authorizes the transaction by the affirmative votes of a majority of the disinterested directors, even though the disinterested directors be less than a quorum (ii) the material facts as to the director's or officer's interest and as to the transaction are disclosed or are known to the stockholders entitled to vote thereon, and the transaction is specifically approved in good faith by vote of the stockholders; or (iii) the transaction is fair as to the corporation as of the time it is authorized, approved or ratified, by the board of directors, a committee or the stockholders.</p>	<p>transaction, including related negotiations, is considered a contract or transaction. In addition, a director or an officer must disclose any contract or transaction to which the corporation and any of the following are a party: (i) an associate of the director or officer; (ii) a group of which the director or officer is a director or officer; or (iii) a group in which the director or officer or an associate of the director or officer has an interest. Such disclosure is required even for a contract or transaction that does not require approval by the board of directors. If a director is required to disclose his or her interest in a contract or transaction, such director is not allowed to vote on any resolution to approve, amend or terminate the contract or transaction or be present during deliberations concerning the approval, amendment or termination of such contract or transaction, unless the contract or transaction (i) relates primarily to the remuneration of the director or an associate of the director as a director, officer, employee or mandatory of the corporation or an affiliate of the corporation, (ii) is for indemnity or liability insurance under the QBCA, or (iii) is with an affiliate of the corporation, and the sole interest of the director is as a director or officer of the affiliate.</p> <p>If a director or officer does not disclose his or her interest in accordance with the QBCA, or (in the case of a director) votes in respect of a resolution on a contract or transaction in which he or she is interested contrary to the QBCA, the corporation or a shareholder may ask the court to declare the contract or transaction null and to require the director or officer to account to the corporation for any profit or gain realized on it by the director or officer or the associates of the director or officer, and to remit the profit or gain to the corporation,</p>

	Delaware	QBCA
		according to the conditions the court considers appropriate. However, the contract or transaction may not be declared null if it was approved by the board of directors and the contract or transaction was in the interest of the corporation when it was approved, nor may the director or officer concerned, in such a case, be required to account for any profit or gain realized or to remit the profit or gain to the corporation. In addition, the contract or transaction may not be declared null if it was approved by ordinary resolution by the shareholders entitled to vote who do not have an interest in the contract or transaction, the required disclosure was made to the shareholders and the contract or transaction was in the best interests of the corporation when it was approved, and if the director or officer acted honestly and in good faith, he or she may not be required to account for the profit or gain realized and to remit the profit or gain to the corporation.
<i>Limitation on Liability of Directors</i>	<p>Under the DGCL, a corporation's certificate of incorporation may include a provision eliminating or limiting the personal liability of a director to the corporation and its stockholders for damages arising from a breach of fiduciary duty as a director. However, no provision can limit the liability of a director for:</p> <ul style="list-style-type: none">• breach of the director's duty of loyalty to the corporation or its stockholders;• acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of the law;• intentional or negligent payment of unlawful dividends or stock purchases or redemptions; or• for any transaction from which the director derived an improper personal benefit.	<p>The QBCA does not permit the limitation of a director's liability as the DGCL does.</p>

Indemnification of Directors and Officers

Delaware

The DGCL permits indemnification for derivative suits only for expenses (including legal fees) and only if the person is not found liable, unless a court determines the person is fairly and reasonably entitled to the indemnification.

QBCA

Under the QBCA, a corporation must indemnify a director or officer, a former director or officer or a person who acts or acted at the corporation's request as a director or officer, or an individual acting in a similar capacity of another group (who is referred to in this document as an indemnifiable person) against all costs, charges and expenses reasonably incurred in the exercise of their functions, including an amount paid to settle an action or satisfy a judgment, reasonably incurred by the indemnifiable person on the exercise of the person's functions or arising from any investigative or other proceeding in which the person is involved if:

- the person acted with honesty and loyalty in the interest of the corporation or other group, and
- in the case of a proceeding enforceable by a monetary penalty, the person had reasonable grounds for believing the person's conduct was lawful.

The QBCA also provides that a corporation must advance moneys to an indemnifiable person for the costs, charges and expenses incurred in connection with such proceeding. In the case of a derivative action, indemnity may be made only with court approval.

Call and Notice of Stockholder Meetings

Under the DGCL, an annual or special stockholder meeting is held on such date, at such time and at such place as may be designated by the board of directors or any other person authorized to call such meeting under the corporation's certificate of incorporation or bylaws. If an annual meeting for election of directors is not held on the date designated or an action by written consent to elect directors in lieu of an annual meeting has not been taken within 30 days after

Under the QBCA, an annual meeting of shareholders must be held no later than 15 months after holding the last preceding annual meeting.

Under the QBCA, the directors of a corporation may call a special meeting at any time. In addition, holders of not less than 10 percent of the issued shares of a corporation that carry the right to vote at a meeting sought to be held may requisition the directors to call a meeting of shareholders.

	<u>Delaware</u>	<u>QBCA</u>
	<p>the date designated for the annual meeting, or if no date has been designated, for a period of 13 months after the later of the last annual meeting or the last action by written consent to elect directors in lieu of an annual meeting, the Delaware Court of Chancery may summarily order a meeting to be held upon the application of any stockholder or director.</p>	
<i>Stockholder Action by Written Consent</i>	<p>Under the DGCL, a majority of the stockholders of a corporation may act by written consent without a meeting unless such action is prohibited by the corporation's certificate of incorporation.</p>	<p>Under the QBCA, a written resolution signed by all the shareholders of a corporation who would have been entitled to vote on the resolution at a meeting is effective to approve the resolution.</p>
<i>Stockholder Nominations and Proposals</i>	<p>Not applicable.</p>	<p>Under the QBCA, a shareholder entitled to vote at a shareholders' meeting may submit a shareholder proposal relating to matters which the shareholder wishes to propose and discuss at an annual shareholders' meeting and, subject to such shareholder's compliance with the prescribed time periods and other requirements of the QBCA pertaining to shareholder proposals, the corporation is required to include such proposal in the information circular pertaining to any annual meeting at which it solicits proxies, subject to certain exceptions. Notice of such a proposal must be provided to the corporation at least 90 days before the anniversary date of the notice of meeting for the last annual shareholders' meeting.</p> <p>In addition, the QBCA requires that any shareholder proposal that includes nominations for the election of directors must be signed by one or more holders of shares representing in the aggregate not less than five per cent of the shares or five per cent of the shares of a class or series of shares of the corporation entitled to vote at the meeting to which the proposal is to be presented.</p>

	Delaware	QBCA
<i>Stockholder Quorum and Vote Requirements</i>	<p>Under the DGCL, quorum for a stock corporation is a majority of the shares entitled to vote at the meeting unless the certificate of incorporation or bylaws specify a different quorum, but in no event may a quorum be less than one-third of the shares entitled to vote. Unless the DGCL, certificate of incorporation or bylaws provide for a greater vote, generally the required vote under the DGCL is a majority of the shares present in person or represented by proxy, except for the election of directors which requires a plurality of the votes cast.</p>	<p>Our amended and restated bylaws to be effective immediately prior to the completion of this offering will require shareholders wishing to nominate directors or propose business for a meeting of shareholders to give timely advance notice in writing, as described in our amended and restated bylaws.</p> <p>Under the QBCA, unless the bylaws otherwise provide, the holders of a majority of the shares of a corporation entitled to vote at a meeting of shareholders, whether present in person or represented by proxy, constitute a quorum.</p> <p>Our amended and restated bylaws to be effective immediately prior to the completion of this offering will provide that holders of 25% of the shares entitled to vote at a meeting of shareholders, whether present in person or represented by proxy, shall constitute quorum.</p>
<i>Amendment of Certificate of Incorporation</i>	<p>Generally, under the DGCL, the affirmative vote of the holders of a majority of the outstanding stock entitled to vote is required to approve a proposed amendment to the certificate of incorporation, following the adoption of the amendment by the board of directors of the corporation, provided that the certificate of incorporation may provide for a greater vote. Under the DGCL, holders of outstanding shares of a class or series are entitled to vote separately on an amendment to the certificate of incorporation if the amendment would have certain consequences, including changes that adversely affect the rights and preferences of such class or series.</p>	<p>Under the QBCA, amendments to the articles of incorporation generally require the approval of not less than two-thirds of the votes cast by shareholders entitled to vote on the resolution.</p> <p>Specified amendments may also require the approval of other classes of shares. If the amendment is of a nature affecting a particular class or series in a manner requiring a separate class or series vote, that class or series is entitled to vote on the amendment whether or not it otherwise carries the right to vote.</p>
<i>Amendment of Bylaws</i>	<p>Under the DGCL, after a corporation has received any payment for any of its stock, the power to adopt, amend or repeal bylaws shall be vested in the stockholders entitled to vote; provided, however, that any corporation may, in</p>	<p>Under the QBCA, the directors may, by resolution, make, amend or repeal any bylaws that regulate the business or affairs of the corporation. Where the directors make, amend or repeal a bylaw, they are required under the</p>

	<u>Delaware</u>	<u>QBCA</u>
	its certificate of incorporation, provide that bylaws may be adopted, amended or repealed by the board of directors. The fact that such power has been conferred upon the board of directors shall not divest the stockholders of the power nor limit their power to adopt, amend or repeal the bylaws.	QBCA to submit that action to the shareholders at the next meeting of shareholders and the shareholders may confirm, reject or amend that action by simple majority, or ordinary resolution. If the action is rejected by shareholders, or the directors of a corporation do not submit the action to the shareholders at the next meeting of shareholders, the action will cease to be effective, and no subsequent resolution of the directors to make, amend or repeal a bylaw having substantially the same purpose or effect will be effective until it is confirmed.
<i>Votes on Mergers, Consolidations and Sales of Assets</i>	The DGCL provides that, unless otherwise provided in the certificate of incorporation or bylaws, the adoption of a merger agreement requires the approval of a majority of the outstanding stock of the corporation entitled to vote thereon.	Under the QBCA, certain extraordinary corporate actions, such as amalgamations (other than with certain affiliated corporations), continuances and sales, leases or exchanges of the property of a corporation if as a result of such alienation the corporation would be unable to retain a significant part of its business activities, and other extraordinary corporate actions such as liquidations, dissolutions and (if ordered by a court) arrangements, are required to be approved by “special resolution.” A “special resolution” is a resolution passed by not less than two-thirds of the votes cast by the shareholders who voted in respect of the resolution or signed by all shareholders entitled to vote on the resolution. In specified cases, a special resolution to approve the extraordinary corporate action is also required to be approved separately by the holders of a class or series of shares, including in certain cases a class or series of shares not otherwise carrying voting rights.
<i>Dissenter’s Rights of Appraisal</i>	Under the DGCL, a stockholder of a Delaware corporation generally has the right to dissent from a merger or consolidation in which the Delaware	The QBCA provides that shareholders of a corporation are entitled to exercise dissent rights (called “the right to demand the repurchase of shares”) and

	<u>Delaware</u>	<u>QBCA</u>
	<p>corporation is participating, subject to specified procedural requirements, including that such dissenting stockholder does not vote in favor of the merger or consolidation. However, the DGCL does not confer appraisal rights, in certain circumstances, including if the dissenting stockholder owns shares traded on a national securities exchange and will receive publicly traded shares in the merger or consolidation. Under the DGCL, a stockholder asserting appraisal rights does not receive any payment for his or her shares until the court determines the fair value or the parties otherwise agree to a value. The costs of the proceeding may be determined by the court and assessed against the parties as the court deems equitable under the circumstances.</p>	<p>to be paid the fair value of their shares in connection with specified matters, including:</p> <ul style="list-style-type: none">• a squeeze-out transaction;• an amendment to the articles to add, change or remove a restriction on the corporation's business activity or on the transfer of the corporation's shares;• an alienation of corporation property if, as a result of the alienation, the corporation is unable to retain a significant part of its business activity;• the corporation to permit the alienation of property of its subsidiary;• an amalgamation agreement;• the continuance of the corporation under the laws of a jurisdiction other than Québec; or• the dissolution of the corporation is withdrawn if, as a result of the alienation of property begun during the liquidation of the corporation, the corporation is unable to retain a significant part of its business activity. <p>However, a shareholder is not entitled to dissent if an amendment to the articles is effected by a court order approving reorganization or by a court order made in connection with an action for an oppression remedy.</p>
<i>Oppression Remedy</i>	<p>The DGCL does not provide for a similar remedy.</p>	<p>The QBCA provides an oppression remedy (called "rectification of abuse of power or iniquity") that enables a court to make any order, whether interim or final, to rectify matters that are oppressive or unfairly prejudicial to the interests of any securityholder, director or officer of the corporation if</p>

Delaware

QBCA

an application is made to a court by an “applicant”. An “applicant” with respect to a corporation means any of the following:

- a present or former registered holder or beneficiary of securities of the corporation or any of its affiliates;
- a present or former officer or director of the corporation or any of its affiliates; and
- any other person who in the discretion of the court has the interest to make the application.

The oppression remedy provides the court with very broad and flexible powers to intervene in corporate affairs to protect shareholders and other complainants. While conduct that is in breach of fiduciary duties of directors or that is contrary to the legal right of a complainant will normally trigger the court’s jurisdiction under the oppression remedy, the exercise of that jurisdiction does not depend on a finding of a breach of those legal and equitable rights. Furthermore, the court may order a corporation to pay the interim expenses of an applicant seeking an oppression remedy, but the applicant may be held accountable for interim costs on final disposition of the complaint (as in the case of a derivative action as described in “Shareholder Derivative Actions” below).

Shareholder Derivative Actions

Under the DGCL, stockholders may bring derivative actions on behalf of, and for the benefit of the corporation. The plaintiff in a derivative action on behalf of the corporation either must be or have been a stockholder of the corporation at the time of the transaction or must be a stockholder who became a stockholder by operation of law in the transaction

Under the QBCA, a shareholder of a corporation may apply to a Québec court for leave to bring an action in the name of, and on behalf of, the corporation or any subsidiary, or to intervene in an existing action to which the corporation or any of its subsidiaries is a party, for the purpose of prosecuting, defending or discontinuing an action on behalf of

	<u>Delaware</u>	<u>QBCA</u>
	<p>regarding which the stockholder complains. A stockholder may not sue derivatively on behalf of the corporation unless the stockholder first makes demand on the corporation that it bring suit and the demand is refused, unless it is shown that making the demand would have been a futile act.</p>	<p>the corporation or its subsidiary. Under the QBCA, no action may be brought and no intervention in an action may be made unless a court is satisfied that:</p> <ul style="list-style-type: none">• the shareholder has given the required 14-day notice to the directors of the corporation or the subsidiary of the shareholder’s intention to apply to the court if the directors do not bring, diligently prosecute or defend or discontinue the action;• the shareholder is acting in good faith; and• it appears to be in the interests of the corporation or the relevant subsidiary that the action be brought, prosecuted, defended or discontinued. <p>Under the QBCA, the court in a derivative action may make any order it thinks fit. In addition, under the QBCA, a court may order the corporation or its relevant subsidiary to pay the shareholder’s interim costs, including reasonable legal fees and disbursements. Although the shareholder may be held accountable for the interim costs on final disposition of the complaint, the shareholder is not required to give security for costs in a derivative action.</p>
<p><i>Anti-Takeover and Ownership Provisions</i></p>	<p>Unless an issuer opts out of the provisions of Section 203 of the DGCL, Section 203 generally prohibits a public Delaware corporation from engaging in a “business combination” with a holder of 15% or more of the corporation’s voting stock (as defined in Section 203), referred to as an interested stockholder, for a period of three years after the date of the transaction in which the interested stockholder became an interested stockholder, except as otherwise provided in Section 203. For these</p>	<p>While the QBCA does not contain specific anti-takeover provisions with respect to “business combinations,” rules and policies of certain Canadian securities regulatory authorities, including Multilateral Instrument 61-101—Protection of Minority Security Holders in Special Transactions, or Multilateral Instrument 61-101, contain requirements in connection with, among other things, “related party transactions” and “business combinations”, including, among other</p>

Delaware	QBCA
purposes, the term “business combination” includes mergers, assets sales and other similar transactions with an interested stockholder.	things, any transaction by which an issuer directly or indirectly engages in the following with a related party: acquires, sells, leases or transfers an asset, acquires the related party, acquires or issues treasury securities, amends the terms of a security if the security is owned by the related party or assumes or becomes subject to a liability or takes certain other actions with respect to debt. The term “related party” includes directors, senior officers and holders of more than 10% of the voting rights attached to all outstanding voting securities of the issuer or holders of a sufficient number of any securities of the issuer to materially affect control of the issuer. Multilateral Instrument 61-101 requires, subject to certain exceptions, the preparation of a formal valuation relating to certain aspects of the transaction and more detailed disclosure in the proxy material sent to security holders in connection with a related party transaction including related to the valuation. Multilateral Instrument 61-101 also requires, subject to certain exceptions, that an issuer not engage in a related party transaction unless the shareholders of the issuer, other than the related parties, approve the transaction by a simple majority of the votes cast.

MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS FOR U.S. HOLDERS

The following is a description of the material U.S. federal income tax consequences to the U.S. Holders described below of owning and disposing of our common shares. It is not a comprehensive description of all tax considerations that may be relevant to a particular U.S. Holder. This discussion applies only to a U.S. Holder that holds our common shares as a capital asset for tax purposes (generally, property held for investment). In addition, it does not describe all of the tax consequences that may be relevant in light of a U.S. Holder's particular circumstances, including state and local tax consequences, estate or gift tax consequences, alternative minimum tax consequences, the potential application of the Medicare contribution tax, and tax consequences applicable to U.S. Holders subject to special rules, such as:

- banks, insurance companies, and certain other financial institutions;
- U.S. expatriates and certain former citizens or long-term residents of the United States;
- dealers or traders in securities who use a mark-to-market method of tax accounting;
- persons holding common shares as part of a hedging transaction, "straddle," wash sale, conversion transaction or integrated transaction or persons entering into a constructive sale with respect to common shares;
- persons whose "functional currency" for U.S. federal income tax purposes is not the U.S. dollar;
- brokers, dealers or traders in securities, commodities or currencies;
- tax-exempt entities or government organizations;
- S corporations, partnerships or other entities or arrangements classified as partnerships for U.S. federal income tax purposes (and investors therein);
- regulated investment companies or real estate investment trusts;
- persons who acquired our common shares pursuant to the exercise of any employee share option or otherwise as compensation;
- persons that own or are deemed to own 10 percent or more of the voting power or value of our shares; and
- persons holding our common shares in connection with a trade or business, permanent establishment or fixed base outside the United States.

If an entity that is classified as a partnership for U.S. federal income tax purposes holds common shares, the U.S. federal income tax treatment of a partner will generally depend on the status of the partner and the activities of the partnership. Partnerships holding common shares and partners in such partnerships are encouraged to consult their tax advisors as to the particular U.S. federal income tax consequences of holding and disposing of common shares.

The discussion is based on the Internal Revenue Code of 1986, as amended, or the Code, existing, proposed and temporary U.S. Treasury Regulations promulgated thereunder and administrative and judicial interpretations thereof and the Convention Between Canada and the United States of America with Respect to Taxes on Income and Capital, signed September 26, 1980, as amended, or the Canada-U.S. Tax Treaty, all as of the date hereof, changes to any of which may affect the tax consequences described herein—possibly with retroactive effect. No ruling has been sought from the U.S. Internal Revenue Service, or the IRS, with respect to any of the U.S. federal income tax consequences described below, and there can be no assurances that the IRS will not take a contrary position concerning the tax consequences of the acquisition, ownership and disposition of our common shares or that such a position would not be sustained by a court.

Table of Contents

A “U.S. Holder” is a holder who, for U.S. federal income tax purposes, is a beneficial owner of common shares who is eligible for the benefits of the Canada-U.S. Tax Treaty and is:

- (i) an individual who is a citizen or resident of the United States;
- (ii) a corporation, or another entity taxable as a corporation, created or organized in or under the laws of the United States, any state therein or the District of Columbia;
- (iii) an estate the income of which is subject to U.S. federal income taxation regardless of its source; or
- (iv) a trust if (1) a U.S. court is able to exercise primary supervision over the administration of the trust and one or more U.S. persons have authority to control all substantial decisions of the trust or (2) the trust has a valid election to be treated as a U.S. person under applicable U.S. Treasury Regulations.

U.S. Holders are encouraged to consult their tax advisors concerning the U.S. federal, state, local and foreign tax consequences of owning and disposing of our common shares in their particular circumstances.

THESE PARAGRAPHS ARE A SUMMARY OF CERTAIN U.S. TAX CONSIDERATIONS AND ARE INTENDED AS A GENERAL GUIDE ONLY. IT IS RECOMMENDED THAT ALL HOLDERS OF COMMON SHARES OBTAIN ADVICE AS TO THE CONSEQUENCES OF THE ACQUISITION, OWNERSHIP AND DISPOSITION OF THE COMMON SHARES IN THEIR OWN SPECIFIC CIRCUMSTANCES FROM THEIR OWN TAX ADVISORS.

Passive Foreign Investment Company Rules

If we are classified as a PFIC in any taxable year, a U.S. Holder will be subject to special rules generally intended to reduce or eliminate any benefits from the deferral of U.S. federal income tax that a U.S. Holder could derive from investing in a non-U.S. company that does not distribute all of its earnings on a current basis.

A non-U.S. corporation will be classified as a PFIC for any taxable year in which, after applying certain look-through rules, either:

- at least 75% of its gross income is passive income (such as interest income); or
- at least 50% of its gross assets (determined on the basis of a quarterly average) is attributable to assets that produce passive income or are held for the production of passive income.

For purposes of these tests, passive income includes dividends, interest, gains from the sale or exchange of investment property and certain rents and royalties. We will be treated as owning our proportionate share of the assets and earning our proportionate share of the income of any other corporation, the equity of which we own, directly or indirectly, 25% or more (by value).

Based on the composition of our income and assets, we believe we were a PFIC for the taxable year ended December 31, 2019. However, based on our operating history and the projected composition of our income and valuation of our assets, including goodwill, for the taxable year ending December 31, 2020, we do not expect to be classified as a PFIC. However, the application of the PFIC rules is subject to uncertainty in several respects, and therefore, no assurances can be provided with respect to our PFIC status for any past, current or future taxable years.

A separate determination must be made after the close of each taxable year as to whether we are a PFIC for that year. As a result, our PFIC status may change from year to year. The total value of our assets for purposes of the asset test generally may be determined in part by reference to the market price of the common shares, which may fluctuate considerably. Fluctuations in the market price of the common shares may result in our being a PFIC for any taxable year. Even if we determine that we are not a PFIC for a taxable year, there can be no assurance that the IRS will agree with our conclusion and that the IRS would not successfully challenge our position. Because of the uncertainties involved in establishing our PFIC status, our United States tax counsel expresses no opinion regarding our PFIC status.

[Table of Contents](#)

If we are classified as a PFIC in any year with respect to which a U.S. Holder owns common shares, we will continue to be treated as a PFIC with respect to such U.S. Holder in all succeeding years during which the U.S. Holder owns the common shares, regardless of whether we continue to meet the tests described above unless (i) we cease to be a PFIC and the U.S. Holder has made a valid “deemed sale” election under the PFIC rules, (ii) we cease to be a PFIC and the U.S. Holder has a valid mark-to-market election in effect (as described below) or (iii) the U.S. Holder makes a valid Qualified Electing Fund Election, or QEF Election, with respect to all taxable years during such U.S. Holders holding period in which we are a PFIC. However, a U.S. Holder may make a QEF Election with respect to our common shares only if we annually provide such U.S. Holder with certain tax information, and we currently do not intend to prepare or provide such information. As a result, the QEF Election is not expected to be available to a U.S. Holder and the remainder of this discussion assumes that such election will not be available. If the “deemed sale” election is made, a U.S. Holder will be deemed to have sold the common shares the U.S. Holder holds at their fair market value and any gain from such deemed sale would be subject to the rules described below. After the deemed sale election, so long as we do not become a PFIC in a subsequent taxable year, the U.S. Holder’s common shares with respect to which such election was made will not be treated as shares in a PFIC and the U.S. Holder will not be subject to the rules described below with respect to any “excess distribution” the U.S. Holder receives from us or any gain from an actual sale or other disposition of the common shares. U.S. Holders should consult their tax advisors as to the possibility and consequences of making a deemed sale election if we cease to be a PFIC and such election becomes available.

For each taxable year we are treated as a PFIC, U.S. Holders will be subject to special tax rules with respect to any “excess distribution” such U.S. Holder receives and any gain such U.S. Holder recognizes from a sale or other disposition (including a pledge) of our common shares, unless (i) such U.S. Holder makes a QEF Election with respect to all taxable years of a U.S. Holder’s holding period during which we are a PFIC or makes a purging election to cause a deemed sale of the common shares at their fair market value in conjunction with a QEF Election (however, as discussed above, such elections are expected and assumed not to be available) or (ii) our common shares constitute “marketable” securities, and such U.S. Holder makes a mark-to-market election as discussed below. Distributions a U.S. Holder receives in a taxable year that are greater than 125% of the average annual distributions a U.S. Holder received during the shorter of the three preceding taxable years or the U.S. Holder’s holding period for the common shares will be treated as an excess distribution. Under these special tax rules:

- the excess distribution or gain will be allocated ratably over a U.S. Holder’s holding period for the common shares;
- the amount allocated to the current taxable year, and any taxable year prior to the first taxable year in which we became a PFIC, will be taxable as ordinary income; and
- the amount allocated to each other year will be subject to the highest tax rate in effect for that year and the interest charge generally applicable to underpayments of tax will be imposed on the resulting tax attributable to each such year.

A U.S. Holder’s tax liability for amounts allocated to years prior to the year of disposition or the year of an “excess distribution” cannot be offset by any net operating losses for such years, and gains (but not losses) realized on the sale of the common shares cannot be treated as capital, even if the U.S. Holder holds the common shares as capital assets.

If we are a PFIC, a U.S. Holder will generally be subject to similar rules with respect to distributions we receive from, and our dispositions of the shares of, any of our direct or indirect subsidiaries that also are PFICs, as if such distributions were indirectly received by, and/or dispositions were indirectly carried out by, such U.S. Holder. U.S. Holders should consult their tax advisors regarding the potential application of the PFIC rules if we were to form or acquire any non-U.S. subsidiaries in the future.

If we are a PFIC, U.S. Holders can avoid the interest charge on excess distributions or gain relating to the common shares by making a mark-to-market election with respect to the common shares, provided that the

[Table of Contents](#)

common shares are “marketable.” Common shares will be marketable if they are “regularly traded” on certain U.S. stock exchanges or on a foreign stock exchange that meets certain conditions. For these purposes, the common shares will be considered regularly traded during any calendar year during which they are traded, other than in de minimis quantities, on at least 15 days during each calendar quarter. Any trades that have as their principal purpose meeting this requirement will be disregarded. Our common shares will be listed on Nasdaq, which is a qualified exchange for these purposes. Consequently, if our common shares remain listed on Nasdaq and are regularly traded, and you are a U.S. Holder that holds our common shares, we expect the mark-to-market election would be available to you if we are a PFIC. Each U.S. Holder should consult its tax advisor as to the whether a mark-to-market election is available or advisable with respect to the common shares.

A U.S. Holder that makes a mark-to-market election must include as ordinary income for each year an amount equal to the excess, if any, of the fair market value of the common shares at the close of the taxable year over the U.S. Holder’s adjusted tax basis in the common shares. Accordingly, such mark-to-market election may accelerate the recognition of income without a corresponding receipt of cash. An electing holder may also claim an ordinary loss deduction for the excess, if any, of the U.S. Holder’s adjusted basis in the common shares over the fair market value of the common shares at the close of the taxable year, but this deduction is allowable only to the extent of any net mark-to-market gains for prior years. The U.S. Holder’s tax basis in our common shares would be adjusted to reflect any income or loss recognized as a result of the mark-to-market election. Gains from an actual sale or other disposition of the common shares will be treated as ordinary income, and any losses incurred on a sale or other disposition of the common shares will be treated first as an ordinary loss (to the extent of any net mark-to-market gains for prior years) and thereafter as a capital loss. Once made, the election cannot be revoked without the consent of the IRS, unless the common shares cease to be marketable.

In any year in which we are classified as a PFIC, a U.S. Holder will be required to file an annual information return on IRS Form 8621 containing such information as the Treasury Regulations and/or other IRS guidance may require. A U.S. Holder’s failure to file IRS Form 8621 could result in the imposition of penalties and the extension of the statute of limitations with respect to U.S. federal income tax. U.S. Holders should consult their tax advisors regarding the requirements of filing such information returns under these rules.

Taxation of Distributions

As described in the section above entitled “Dividend Policy,” we do not anticipate declaring or paying dividends to holders of our common shares in the foreseeable future. However, if we make a distribution contrary to this expectation, subject to the discussion above under “Passive Foreign Investment Company Rules,” distributions paid to a U.S. Holder in respect to our common shares (including any amounts withheld in respect of foreign taxes), other than certain pro rata distributions of common shares, will generally be treated as dividends to the extent paid out of our current or accumulated earnings and profits (as determined under U.S. federal income tax principles). To the extent a distribution received by a U.S. Holder is not a dividend because it exceeds the U.S. Holder’s pro rata share of our current and accumulated earnings and profits, it will be treated first as a tax-free return of capital and reduce (but not below zero) the adjusted tax basis of the U.S. Holder’s common shares. To the extent the distribution exceeds the adjusted tax basis of the U.S. Holder’s common shares, the remainder will be taxed as capital gain. Because we may not calculate our earnings and profits under U.S. federal income tax principles, we expect that distributions generally will be reported to U.S. Holders as dividends.

Subject to applicable limitations, dividends paid by a “qualified foreign corporation” to certain non-corporate U.S. Holders may be taxable at preferential rates provided that certain requirements are met. A non-U.S. corporation (other than a corporation that is classified as a PFIC for the taxable year in which the dividend is paid or the preceding taxable year) generally will be considered to be a qualified foreign corporation (a) if it is eligible for the benefits of a comprehensive tax treaty with the United States which the Secretary of Treasury of the United States determines is satisfactory for purposes of this provision and which includes an exchange of information provision, or (b) with respect to any dividend it pays on shares that are readily tradable

[Table of Contents](#)

on an established securities market in the United States. Our common shares will generally be considered to be readily tradable on an established securities market in the United States for so long as they are listed on the Nasdaq Global Select Market. The amount of the dividend will be treated as foreign-source dividend income to U.S. Holders and will not be eligible for the dividends-received deduction generally available to U.S. corporations under the Code. Dividends will generally be included in a U.S. Holder's income on the date of the U.S. Holder's receipt of the dividend. The amount of any dividend income paid in foreign currency will be the U.S. dollar amount calculated by reference to the exchange rate in effect on the date of actual or constructive receipt, regardless of whether the payment is in fact converted into U.S. dollars. If the dividend is converted into U.S. dollars on the date of receipt, a U.S. Holder should not be required to recognize foreign currency gain or loss in respect of the dividend income. A U.S. Holder may have foreign currency gain or loss if the dividend is converted into U.S. dollars after the date of receipt. Such gain or loss would generally be treated as U.S.-source ordinary income or loss. The amount of any distribution of property other than cash (and other than certain pro rata distributions of common shares or rights to acquire common shares) will be the fair market value of such property on the date of distribution.

For foreign tax credit limitation purposes, our dividends will generally be treated as passive category income. A U.S. Holder generally may claim the amount of any Canadian withholding tax as either a deduction from gross income or a credit against its U.S. federal income tax liability. However, the foreign tax credit is subject to numerous complex limitations that must be determined and applied on an individual basis. Each U.S. Holder should consult its own tax advisors regarding the foreign tax credit rules.

Sale or Other Taxable Disposition of Common Shares

Subject to the discussion above under "Passive Foreign Investment Company Rules," gain or loss realized on the sale or other taxable disposition of common shares will be capital gain or loss, and will be a long-term capital gain or loss if the U.S. Holder held the common shares for more than one year. The amount of the gain or loss will equal the difference between the U.S. Holder's adjusted tax basis in the common shares disposed of and the amount realized on the disposition, in each case as determined in U.S. dollars. This gain or loss will generally be U.S.-source gain or loss for foreign tax credit purposes, which will generally limit the availability of foreign tax credits. The deductibility of capital losses is subject to limitations.

If the consideration received by a U.S. Holder is not paid in U.S. dollars, the amount realized will be the U.S. dollar value of the payment received determined by reference to the spot rate of exchange on the date of the sale or other disposition. However, if the common shares are treated as traded on an "established securities market" and a U.S. Holder is either a cash basis taxpayer or an accrual basis taxpayer that has made a special election (which must be applied consistently from year to year and cannot be changed without the consent of the IRS), such U.S. Holder will determine the U.S. dollar value of the amount realized in a non-U.S. dollar currency by translating the amount received at the spot rate of exchange on the settlement date of the sale. If a U.S. Holder is an accrual basis taxpayer that is not eligible to or does not elect to determine the amount realized using the spot rate on the settlement date, such U.S. Holder will recognize foreign currency gain or loss to the extent of any difference between the U.S. dollar amount realized on the date of sale or disposition and the U.S. dollar value of the currency received at the spot rate on the settlement date.

WE STRONGLY URGE YOU TO CONSULT YOUR TAX ADVISOR REGARDING THE IMPACT OF OUR PFIC STATUS ON YOUR INVESTMENT IN THE COMMON SHARES AS WELL AS THE APPLICATION OF THE PFIC RULES TO YOUR INVESTMENT IN THE COMMON SHARES.

Information Reporting and Backup Withholding

Payments of dividends and sales proceeds that are made within the United States or through certain U.S.-related financial intermediaries generally are subject to information reporting, and may be subject to backup withholding, unless (i) the U.S. Holder is a corporation or other exempt recipient or (ii) in the case of backup

[Table of Contents](#)

withholding, the U.S. Holder provides a correct taxpayer identification number and certifies that it is not subject to backup withholding (generally, by providing an IRS Form W-9).

Backup withholding is not an additional tax. The amount of any backup withholding from a payment to a U.S. Holder will be allowed as a credit against the holder's U.S. federal income tax liability and may entitle it to a refund, provided that the required information is timely furnished to the IRS.

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. Each U.S. Holder should consult its own tax advisors regarding the information reporting and backup withholding rules.

Information with Respect to Foreign Financial Assets

Certain U.S. Holders who are individuals (and, under regulations, certain entities) may be required to report information relating to the common shares, subject to certain exceptions (including an exception for common shares held in accounts maintained by certain U.S. financial institutions). Such U.S. Holders who fail to timely furnish the required information may be subject to a penalty. Additionally, if a U.S. Holder does not file the required information, the statute of limitations with respect to tax returns of the U.S. Holder to which the information relates may not close until three years after such information is filed. Each U.S. Holder should consult its own tax advisors regarding its reporting obligations with respect to its ownership and disposition of the common shares.

MATERIAL CANADIAN FEDERAL INCOME TAX CONSIDERATIONS

The following is, as of the date hereof, a summary of the principal Canadian federal income tax considerations generally applicable under the Income Tax Act (Canada) and the regulations promulgated thereunder, collectively the Tax Act, to a purchaser who acquires, as beneficial owner, the common shares under this offering, and who, for purposes of the Tax Act and at all relevant times, (i) is not, and is not deemed to be, resident in Canada, (ii) holds the common shares as capital property, (iii) deals at arm's length with, and is not affiliated with, the Company or the underwriters, and (iv) does not use or hold and will not be deemed to use or hold, the common shares in a business carried on in Canada, hereinafter, a Non-Resident Holder. Special rules, which are not discussed in this summary, may apply to an insurer that carries on an insurance business in Canada and elsewhere.

This summary is based upon the provisions of the Tax Act in force as of the date hereof, all specific proposals to amend the Tax Act that have been publicly announced by or on behalf of the Minister of Finance (Canada) prior to the date hereof, or the Proposed Amendments, the Canada-U.S. Tax Treaty, and an understanding of the current administrative policies and assessing practices of the Canada Revenue Agency, or the CRA, published in writing by it prior to the date hereof. This summary assumes the Proposed Amendments will be enacted in the form proposed. However, no assurance can be given that the Proposed Amendments will be enacted in their current form, or at all. This summary is not exhaustive of all possible Canadian federal income tax considerations and, except for the Proposed Amendments, does not take into account or anticipate any changes in the law or any changes in the CRA's administrative policies or assessing practices, whether by legislative, governmental or judicial action or decision, nor does it take into account or anticipate any other federal or any provincial, territorial or foreign tax considerations, which may differ significantly from those discussed herein.

This summary is not applicable to a Non-Resident Holder who makes or has made a "functional currency" reporting election; or that has entered or enters into a "derivative forward agreement" with respect to the common shares (each as defined in the Tax Act). **Any such Non-Resident Holder should consult its own tax advisor with respect to an investment in the common shares. This summary is of a general nature only and is not intended to be, nor should it be construed to be, legal or tax advice to any prospective purchaser or holder of the common shares, and no representations with respect to the income tax consequences to any prospective purchaser or holder are made. Consequently, prospective purchasers or holders of the common shares should consult their own tax advisors with respect to their particular circumstances.**

Currency Conversion

Generally, for purposes of the Tax Act, all amounts relating to the acquisition, holding or disposition of the common shares must be converted into Canadian dollars based on the exchange rates as determined in accordance with the Tax Act. The amounts subject to withholding tax and any capital gains or capital losses realized by a Non-Resident Holder may be affected by fluctuations in the Canadian-U.S. dollar exchange rate.

Dispositions

A Non-Resident Holder will not be subject to tax under the Tax Act on a disposition of a common share, unless the common share constitutes "taxable Canadian property" (as defined in the Tax Act) of the Non-Resident Holder at the time of disposition and the Non-Resident Holder is not entitled to relief under an applicable income tax treaty or convention.

Provided the common shares are listed on a "designated stock exchange," as defined in the Tax Act (which currently includes the Nasdaq Stock Market) at the time of disposition, the common shares will generally not constitute taxable Canadian property of a Non-Resident Holder at that time, unless at any time during the 60-month period immediately preceding the disposition the following two conditions are satisfied

[Table of Contents](#)

concurrently: (i) (a) the Non-Resident Holder; (b) persons with whom the Non-Resident Holder did not deal at arm's length; (c) partnerships in which the Non-Resident Holder or a person described in (b) holds a membership interest directly or indirectly through one or more partnerships; or (d) any combination of the persons and partnerships described in (a) through (c), owned 25% or more of the issued shares of any class or series of the shares of the Company; and (ii) more than 50% of the fair market value of the shares of the Company was derived directly or indirectly from one or any combination of: real or immovable property situated in Canada, "Canadian resource properties", "timber resource properties" (each as defined in the Tax Act), and options in respect of, or interests in or for civil law rights in, any such property whether or not the property exists. Notwithstanding the foregoing, in certain circumstances set out in the Tax Act, the common shares could be deemed to be taxable Canadian property. Even if the common shares are taxable Canadian property to a Non-Resident Holder, such Non-Resident Holder may be exempt from tax under the Tax Act on the disposition of such common shares by virtue of an applicable income tax treaty or convention, such as the Canada-U.S. Tax Treaty. **A Non-Resident Holder contemplating a disposition of common shares that may constitute taxable Canadian property should consult a tax advisor prior to such disposition.**

Dividends

Dividends paid or credited on the common shares or deemed to be paid or credited on the common shares to a Non-Resident Holder will be subject to Canadian withholding tax under the Tax Act at the rate of 25%, although such rate may be reduced under the provisions of an applicable income tax convention between Canada and the Non-Resident Holder's country of residence. For example, under the Canada-U.S. Tax Treaty, the rate of Canadian withholding tax applicable to a dividend paid on a common share to a Non-Resident Holder that is a resident of the United States for purposes of the Canada-U.S. Tax Treaty, beneficially owns the dividend and is fully entitled to the benefits of the Canada-U.S. Tax Treaty is generally reduced to 15%.

UNDERWRITING

Under the terms and subject to the conditions in an underwriting agreement dated the date of this prospectus, the underwriters named below, for whom Morgan Stanley & Co. LLC, Goldman Sachs & Co. LLC, Cowen and Company, LLC and Piper Sandler & Co. are acting as representatives, have severally agreed to purchase, and we have agreed to sell to them, severally, the number of shares indicated below:

<u>Name</u>	<u>Number of Shares</u>
Morgan Stanley & Co. LLC	
Goldman Sachs & Co. LLC	
Cowen and Company, LLC	
Piper Sandler & Co.	
Total:	<u>10,000,000</u>

The underwriters and the representatives are collectively referred to as the “underwriters” and the “representatives,” respectively. The underwriters are offering the common shares subject to their receipt and acceptance of the shares from us and subject to prior sale. The offering of the shares by the underwriters is also subject to the underwriters’ right to reject any order in whole or in part. The underwriting agreement provides that the obligations of the several underwriters to pay for and accept delivery of the common shares offered by this prospectus are subject to the approval of certain legal matters by their counsel and to certain other conditions. The underwriters are obligated to take and pay for all of the common shares offered by this prospectus if any such shares are taken. However, the underwriters are not required to take or pay for the shares covered by the underwriters’ option to purchase additional shares described below.

The underwriters initially propose to offer part of the common shares directly to the public at the offering price listed on the cover page of this prospectus and part to certain dealers at a price that represents a concession not in excess of \$ _____ per share under the public offering price. After the initial offering of the common shares, the offering price and other selling terms may from time to time be varied by the representatives.

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase up to 1,500,000 additional common shares at the public offering price listed on the cover page of this prospectus, less underwriting commissions. To the extent the option is exercised, each underwriter will become obligated, subject to certain conditions, to purchase about the same percentage of the additional common shares as the number listed next to the underwriter’s name in the preceding table bears to the total number of common shares listed next to the names of all underwriters in the preceding table.

The following table shows the per share and total public offering price, underwriting commissions, and proceeds before expenses to us. These amounts are shown assuming both no exercise and full exercise of the underwriters’ option to purchase up to an additional 1,500,000 common shares.

	<u>Per Share</u>	<u>Total</u>	
		<u>No Exercise</u>	<u>Full Exercise</u>
Public offering price	\$	\$	\$
Underwriting commissions:	\$	\$	\$
Proceeds, before expenses, to us	\$	\$	\$

The estimated offering expenses payable by us, exclusive of the underwriting commissions, are approximately \$4.0 million. We have agreed to reimburse the underwriters for expense relating to clearance of this offering with the Financial Industry Regulatory Authority up to \$35,000.

[Table of Contents](#)

The underwriters have informed us that they do not intend sales to discretionary accounts to exceed 5% of the total number of common shares offered by them.

Our common shares have been approved for listing on the Nasdaq Global Select Market under the symbol “RPTX.”

At our request, the underwriters have reserved for sale, at the initial public offering price, up to five percent of the shares offered by this prospectus for sale to some of our directors, officers, employees, business associates and related persons through a directed share program. If these persons purchase reserved shares, this will reduce the number of shares available for sale to the general public. Any reserved shares that are not so purchased will be offered by the underwriters to the general public on the same terms as the other shares offered by this prospectus. In addition, we have requested that the underwriters make issuer directed allocations to certain existing investors.

We, all of our directors and officers, and the holders of substantially all of our common shares and securities convertible into or exchangeable for our common shares have entered into lock-up agreements with the underwriters and/or are subject to market standoff agreements or other agreements with us under which they agreed, subject to specific exceptions, that without the prior written consent of Morgan Stanley & Co. LLC, Goldman Sachs & Co. LLC and Cowen and Company, LLC on behalf of the underwriters, we and they will not, during the period ending at least 180 days, or the restricted period, after the date of this prospectus:

- 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, any common shares or any other securities convertible into or exercisable or exchangeable for common shares;
- file any registration statement with the SEC relating to the offering of any common shares or any securities convertible into or exercisable or exchangeable for common shares; or
- enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the common shares,

whether any such transaction described above is to be settled by delivery of common shares or such other securities, in cash or otherwise. In addition, we and each such person agrees that, without the prior written consent of Morgan Stanley & Co. LLC, Goldman Sachs & Co. LLC and Cowen and Company, LLC on behalf of the underwriters, we or such other person will not, during the restricted period, make any demand for, or exercise any right with respect to, the registration of any common shares or any security convertible into or exercisable or exchangeable for common shares.

Morgan Stanley & Co. LLC, Goldman Sachs & Co. LLC and Cowen and Company, LLC, in their joint discretion, may release the common shares and other securities subject to the lock-up agreements described above in whole or in part at any time.

In order to facilitate the offering of the common shares, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the common shares. Specifically, the underwriters may sell more shares than they are obligated to purchase under the underwriting agreement, creating a short position. A short sale is covered if the short position is no greater than the number of shares available for purchase by the underwriters under their option to purchase additional shares. The underwriters can close out a covered short sale by exercising their option to purchase additional shares or purchasing shares in the open market. In determining the source of shares to close out a covered short sale, the underwriters will consider, among other things, the open market price of shares compared to the price available under their option to purchase additional shares. The underwriters may also sell shares in excess of their option to purchase additional shares, creating a naked short position. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common shares in the open market after pricing that could adversely affect investors

[Table of Contents](#)

who purchase in this offering. As an additional means of facilitating this offering, the underwriters may bid for, and purchase, common shares in the open market to stabilize the price of the common shares. These activities may raise or maintain the market price of the common shares above independent market levels or prevent or retard a decline in the market price of the common shares. The underwriters are not required to engage in these activities and may end any of these activities at any time.

The underwriters may also impose a penalty bid. This occurs when a particular underwriter repays to the underwriters a portion of the underwriting commission received by it because the representatives have repurchased shares sold by or for the account of such underwriter in stabilizing or short covering transactions.

We and the underwriters have agreed to indemnify each other against certain liabilities, including liabilities under the Securities Act.

A prospectus in electronic format may be made available on websites maintained by one or more underwriters, or selling group members, if any, participating in this offering. The representatives may agree to allocate a number of common shares to underwriters for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters that may make Internet distributions on the same basis as other allocations.

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. Certain of the underwriters and their respective affiliates have, from time to time, performed, and may in the future perform, various financial advisory and investment banking services for us, for which they received or will receive customary fees and expenses.

In addition, in the ordinary course of their various business activities, the underwriters and their respective 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 account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve our securities and instruments. The underwriters and their respective affiliates may also make investment recommendations 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 or short positions in such securities and instruments.

Certain affiliates of Cowen and Company, LLC purchased 1,903,408 of our Series B convertible preferred shares in our September 2019 Series B preferred share financing. Those Series B preferred shares will convert into 1,903,408 common shares immediately prior to and in connection with the completion of this offering.

Pricing of the offering

Prior to this offering, there has been no public market for our common shares. The initial public offering price was determined by negotiations between us and the representatives. Among the factors considered in determining the initial public offering price were our future prospects and those of our industry in general, our sales, earnings and certain other financial and operating information in recent periods, and the price-earnings ratios, price-sales ratios, market prices of securities, and certain financial and operating information of companies engaged in activities similar to ours.

Selling restrictions

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Regulation, or each, a Relevant Member State, an offer to the public of any of our common shares may not be

Table of Contents

made in that Relevant Member State, except that an offer to the public in that Relevant Member State of any of our common shares may be made at any time under the following exemptions under the Prospectus Regulation, if they have been implemented in that Relevant Member State:

- (i) to any legal entity which is a qualified investor as defined in the Prospectus Regulation;
- (ii) to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Regulation), subject to obtaining the prior consent of the representatives for any such offer; or
- (iii) in any other circumstances falling within Article 1(4) of the Prospectus Regulation,

provided that no such offer of our common shares shall result in a requirement for the publication by us or any underwriter of a prospectus pursuant to Article 3 of the Prospectus Regulation.

For the purposes of this provision, the expression an “offer to the public” in relation to any of our common shares 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 of our common shares to be offered so as to enable an investor to decide to purchase any of our common shares, and the expression “Prospectus Regulation” means Regulation (EU) 2017/1129.

United Kingdom

Each underwriter has represented and agreed that:

- (a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000, or the FSMA, received by it in connection with the issue or sale of our common shares in circumstances in which Section 21(1) of the FSMA does not apply to us; and
- (b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the of our common shares in, from or otherwise involving the United Kingdom.

Canada

The shares 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 sale or resale of the shares 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.

Hong Kong

The shares 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

[Table of Contents](#)

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 shares 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 the shares 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

No registration pursuant to Article 4, paragraph 1 of the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948, as amended), or the FIEL, has been made or will be made with respect to the solicitation of the application for the acquisition of our shares.

Accordingly, our shares have not been, directly or indirectly, offered or sold and will not be, directly or indirectly, offered or sold in Japan or to, or for the benefit of, any “resident” of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan) or to others for re-offering or re-sale, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan except pursuant to an exemption from the registration requirements, and otherwise in compliance with, the FIEL and the other applicable laws and regulations of Japan.

For Qualified Institutional Investors, or QII

Please note that the solicitation for newly-issued or secondary securities (each as described in Paragraph 2, Article 4 of the FIEL) in relation to our shares constitutes either a “QII only private placement” or a “QII only secondary distribution” (each as described in Paragraph 1, Article 23-13 of the FIEL). Disclosure regarding any such solicitation, as is otherwise prescribed in Paragraph 1, Article 4 of the FIEL, has not been made in relation to our shares. Our shares may only be transferred to QIIs.

For Non-QII Investors

Please note that the solicitation for newly-issued or secondary securities (each as described in Paragraph 2, Article 4 of the FIEL) in relation to our shares constitutes either a “small number private placement” or a “small number private secondary distribution” (each as is described in Paragraph 4, Article 23-13 of the FIEL).

Disclosure regarding any such solicitation, as is otherwise prescribed in Paragraph 1, Article 4 of the FIEL, has not been made in relation to our shares. Our shares may only be transferred en bloc without subdivision to a single investor.

Singapore

This prospectus supplement has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus supplement and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor (as defined under Section 4A of the Securities and Futures Act, Chapter 289 of Singapore (the “SFA”)) under Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA, in each case subject to conditions set forth in the SFA.

[Table of Contents](#)

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor, the securities (as defined in Section 239(1) of the SFA) of that corporation shall not be transferable for six months after that corporation has acquired the shares under Section 275 of the SFA except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person (as defined in Section 275(2) of the SFA), (2) where such transfer arises from an offer in that corporation's securities pursuant to Section 275(1A) of the SFA, (3) where no consideration is or will be given for the transfer, (4) where the transfer is by operation of law, (5) as specified in Section 276(7) of the SFA, or (6) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore, or Regulation 32.

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is a trust (where the trustee is not an accredited investor (as defined in Section 4A of the SFA)) whose sole purpose is to hold investments and each beneficiary of the trust is an accredited investor, the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferable for six months after that trust has acquired the shares under Section 275 of the SFA except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person (as defined in Section 275(2) of the SFA), (2) where such transfer arises from an offer that is made on terms that such rights or interest are acquired at a consideration of not less than S\$200,000 (or its equivalent in a foreign currency) for each transaction (whether such amount is to be paid for in cash or by exchange of securities or other assets), (3) where no consideration is or will be given for the transfer, (4) where the transfer is by operation of law, (5) as specified in Section 276(7) of the SFA, or (6) as specified in Regulation 32.

Israel

This prospectus 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 is being 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, underwriters purchasing for their own account, venture capital funds, and entities with shareholders' equity in excess of NIS 50 million, each as defined in the Addendum (as it may be amended from time to time, collectively referred to as institutional investors). Institutional investors may be required to submit written confirmation that they fall within the scope of the Addendum. In addition, we may distribute and direct this prospectus in Israel, at our sole discretion, to certain other exempt investors or to investors who do not qualify as institutional or exempt investors, provided that the number of such non-qualified investors in Israel shall be no greater than 35 in any 12-month period.

LEGAL MATTERS

Certain legal matters in connection with this offering relating to U.S. law will be passed upon for us by Cooley LLP, Boston, Massachusetts. The validity of the issuance of our common shares offered in this prospectus and certain other matters of Canadian law will be passed upon for us by Stikeman Elliott LLP, Montréal, Québec, Canada. Certain legal matters in connection with this offering will be passed upon for the underwriters by Goodwin Procter LLP, Boston, Massachusetts, with respect to U.S. law.

EXPERTS

The consolidated financial statements of Repare Therapeutics Inc. at December 31, 2018 and 2019 and for each of the three years in the period ended December 31, 2019, appearing in this prospectus have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon appearing elsewhere herein, and are included in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

SERVICE OF PROCESS AND ENFORCEMENT OF LIABILITIES

We are incorporated under the laws of Canada and, immediately prior to the completion of the offering, will be continued under the laws of Québec. Substantially all of our assets are located outside the United States. In addition, several of our directors and officers are nationals and/or residents of countries other than the United States, and all or a substantial portion of such persons' assets may be 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 or such persons or to enforce against them or against us, judgments obtained in United States courts, including judgments predicated upon the civil liability provisions of the securities laws of the United States or any state thereof. In addition, investors should not assume that the courts of Canada (i) would enforce judgments of U.S. courts obtained in actions against us, our officers or directors, or other said persons, predicated upon the civil liability provisions of the U.S. federal securities laws or other laws of the United States or (ii) would enforce, in original actions, liabilities against us or such directors, officers or experts predicated upon the United States federal securities laws or any securities or other laws of any state or jurisdiction of the United States.

In addition, there is doubt as to the applicability of the civil liability provisions of U.S. federal securities law to original actions instituted in Canada. It may be difficult for an investor, or any other person or entity, to assert U.S. securities laws claims in original actions instituted in Canada.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form S-1, including exhibits and schedules, under the Securities Act, with respect to the common shares being offered by this prospectus. This prospectus, which constitutes part of the registration statement, does not contain all of the information in the registration statement and its exhibits. For further information with respect to us and the common shares offered by this prospectus, we refer you to the registration statement and its exhibits. Statements contained in this prospectus as to the contents of any contract or any other document referred to are not necessarily complete, and in each instance, we refer you to the copy of the contract or other document filed as an exhibit to the registration statement. Each of these statements is qualified in all respects by this reference.

You may read our SEC filings, including this registration statement, over the Internet at the SEC's website at www.sec.gov. Upon the completion of this offering, we will be subject to the information reporting requirements of the Exchange Act and we will file reports, proxy statements and other information with the SEC. These reports, proxy statements and other information will be available on the website of the SEC referred to

[Table of Contents](#)

above. We also maintain a website at www.reparerx.com, at which, following the completion of this offering, you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. Information contained on 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 only.

REPARE THERAPEUTICS INC.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Audited Financial Statements

	<u>Page</u>
Report of Independent Registered Public Accounting Firm	F-2
Consolidated Balance Sheets as of December 31, 2018 and 2019	F-3
Consolidated Statements of Operations and Comprehensive Loss for the three years ended December 31, 2017, 2018 and 2019	F-4
Consolidated Statements of Convertible Preferred Shares and Shareholders' Deficit for the three years ended December 31, 2017, 2018 and 2019	F-5
Consolidated Statements of Cash Flows for the three years ended December 31, 2017, 2018 and 2019	F-6
Notes to Consolidated Financial Statements	F-7

Unaudited Interim Financial Statements

	<u>Page</u>
Condensed Consolidated Balance Sheets as of December 31, 2019 and March 31, 2020	F-37
Condensed Consolidated Statements of Operations and Comprehensive Loss for the three-month periods ended March 31, 2019 and 2020	F-38
Condensed Consolidated Statements of Convertible Preferred Shares and Shareholders' Deficit for the three-month periods ended March 31, 2019 and 2020	F-39
Condensed Consolidated Statements of Cash Flows for the three-month periods ended March 31, 2019 and 2020	F-40
Notes to Condensed Consolidated Financial Statements	F-41

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Repare Therapeutics Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Repare Therapeutics Inc. (the “Company”) as of December 31, 2018 and 2019, the related consolidated statements of operations and comprehensive loss, convertible preferred shares and shareholders’ deficit, and cash flows for each of the three years in the period ended December 31, 2019, 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 at December 31, 2018 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019 in conformity with U.S. generally accepted accounting principles.

Adoption of New Accounting Standard

As discussed in Note 2 to the consolidated financial statements, the Company changed its method of accounting for leases in 2019.

Basis for Opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s 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 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 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 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 financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP¹

We have served as the Company’s auditor since 2017.
Montréal, Canada
April 3, 2020 except for Note 19(b)
as to which the date is June 15, 2020

¹ CPA auditor, CA, public accountancy permit no. A113209

Repare Therapeutics Inc.
Consolidated Balance Sheets
(In thousands of U.S. dollars, except share data)

	As of December 31,	
	2018	2019
ASSETS		
Current assets:		
Cash	\$ 10,731	\$ 94,797
Research and development tax credits receivable	477	1,080
Other receivables	587	1,976
Prepaid expenses and other current assets	253	719
Total current assets	12,048	98,572
Property and equipment, net	1,652	2,390
Restricted cash	198	208
Operating lease right-of-use assets	—	1,034
Other assets	27	359
Deferred tax assets	—	132
TOTAL ASSETS	\$ 13,925	\$ 102,695
LIABILITIES, CONVERTIBLE PREFERRED SHARES AND SHAREHOLDERS' DEFICIT		
Current liabilities:		
Accounts payable	\$ 1,245	\$ 2,127
Accrued expenses and other current liabilities	660	1,276
Operating lease liability, current portion	—	625
Income tax payable	—	218
Total current liabilities	1,905	4,246
Tranche obligation	2,490	—
Operating lease liability, net of current portion	—	439
Deferred revenue	—	8,142
Other liabilities	41	—
TOTAL LIABILITIES	4,436	12,827
Commitments and Contingencies (note 15)		
Series A convertible Preferred Shares, no par value per share; unlimited shares authorized as of December 31, 2018 and 2019; 6,813,340 shares and 11,090,135 shares issued and outstanding as of December 31, 2018 and 2019, respectively; liquidation and redemption value of \$31,750 and \$52,750 as of December 31, 2018 and 2019, respectively	31,873	53,749
Series B convertible Preferred Shares, no par value per share; 0 shares and unlimited shares authorized as of December 31, 2018 and 2019, respectively; 0 shares and 10,468,258 shares issued and outstanding as of December 31, 2018 and 2019, respectively; liquidation and redemption value of \$0 and \$82,496 as of December 31, 2018 and 2019, respectively	—	82,248
TOTAL CONVERTIBLE PREFERRED SHARES	31,873	135,997
SHAREHOLDERS' DEFICIT:		
Common shares, no par value per share; unlimited shares authorized as of December 31, 2018 and 2019; 1,528,374 shares issued and outstanding as of December 31, 2018, and 2019	1	1
Additional paid-in capital	340	3,811
Accumulated deficit	(22,725)	(49,941)
TOTAL SHAREHOLDERS' DEFICIT	(22,384)	(46,129)
TOTAL LIABILITIES, CONVERTIBLE PREFERRED SHARES AND SHAREHOLDERS' DEFICIT	\$ 13,925	\$ 102,695

The accompanying notes are an integral part of these consolidated financial statements

Repare Therapeutics Inc.
Consolidated Statements of Operations and Comprehensive Loss
(In thousands of U.S. dollars, except share and per share data)

	Year Ended December 31,		
	2017	2018	2019
Operating expenses:			
Research and development, net of tax credits	\$ 4,401	\$ 9,906	\$ 20,995
General and administrative	1,774	2,914	5,382
Total operating expenses	<u>6,175</u>	<u>12,820</u>	<u>26,377</u>
Loss from operations	<u>(6,175)</u>	<u>(12,820)</u>	<u>(26,377)</u>
Other (expense) income, net			
Realized and unrealized (loss) gain on foreign exchange	(147)	(292)	712
Change in fair value of convertible notes	(1,615)	—	—
Change in fair value of Series A Preferred Share tranche obligation	180	(1,130)	(1,350)
Other expense	(39)	(6)	(6)
Total other expense, net	<u>(1,621)</u>	<u>(1,428)</u>	<u>(644)</u>
Loss before income taxes	<u>(7,796)</u>	<u>(14,248)</u>	<u>(27,021)</u>
Income tax expense	—	(35)	(195)
Net loss and comprehensive loss	<u>\$ (7,796)</u>	<u>\$ (14,283)</u>	<u>\$ (27,216)</u>
Net loss attributable to common shareholders—basic and diluted	<u>\$ (7,796)</u>	<u>\$ (14,283)</u>	<u>\$ (27,216)</u>
Net loss per share attributable to common shareholders—basic and diluted	<u>\$ (5.12)</u>	<u>\$ (9.35)</u>	<u>\$ (17.81)</u>
Weighted-average common shares outstanding—basic and diluted	<u>1,522,544</u>	<u>1,528,374</u>	<u>1,528,374</u>
Pro forma net loss per share attributable to common shareholders—basic and diluted (unaudited)			<u>\$ (1.64)</u>
Pro forma weighted-average common shares outstanding—basic and diluted (unaudited)			<u>15,790,631</u>

The accompanying notes are an integral part of these consolidated financial statements

Repare Therapeutics Inc.
Consolidated Statements of Convertible Preferred Shares and Shareholders' Deficit
(In thousands of U.S. dollars, except share data)

	Convertible Preferred Shares				Common Shares		Additional Paid-in Capital	Accumulated Deficit	Total Shareholders' Deficit
	Series A		Series B		Shares	Amount			
	Shares	Amount	Shares	Amount					
Balance, January 1, 2017	—	\$ —	—	\$ —	1,429,397	\$ 1	\$ —	\$ (646)	\$ (645)
Issuance of Series A convertible Preferred Shares, net of issuance costs of \$42	6,813,340	31,873	—	—	—	—	—	—	—
Issuance of common shares	—	—	—	—	98,977	—	—	—	—
Share-based compensation expense	—	—	—	—	—	—	34	—	34
Net loss and comprehensive loss	—	—	—	—	—	—	—	(7,796)	(7,796)
Balance, December 31, 2017	<u>6,813,340</u>	<u>\$31,873</u>	<u>—</u>	<u>\$ —</u>	<u>1,528,374</u>	<u>\$ 1</u>	<u>\$ 34</u>	<u>\$ (8,442)</u>	<u>\$ (8,407)</u>
Share-based compensation expense	—	—	—	—	—	—	306	—	306
Net loss and comprehensive loss	—	—	—	—	—	—	—	(14,283)	(14,283)
Balance, December 31, 2018	<u>6,813,340</u>	<u>\$31,873</u>	<u>—</u>	<u>\$ —</u>	<u>1,528,374</u>	<u>\$ 1</u>	<u>\$ 340</u>	<u>\$ (22,725)</u>	<u>\$ (22,384)</u>
Issuance of Series A convertible Preferred Shares, net of issuance costs of \$5	4,276,795	21,876	—	—	—	—	—	—	—
Series A Tranche 3 termination	—	—	—	—	—	—	2,960	—	2,960
Issuance of Series B convertible Preferred Shares, net of issuance costs of \$248	—	—	10,468,258	82,248	—	—	—	—	—
Share-based compensation expense	—	—	—	—	—	—	511	—	511
Net loss and comprehensive loss	—	—	—	—	—	—	—	(27,216)	(27,216)
Balance, December 31, 2019	<u>11,090,135</u>	<u>\$53,749</u>	<u>10,468,258</u>	<u>\$82,248</u>	<u>1,528,374</u>	<u>\$ 1</u>	<u>\$ 3,811</u>	<u>\$ (49,941)</u>	<u>\$ (46,129)</u>

The accompanying notes are an integral part of these consolidated financial statements

Repare Therapeutics Inc.
Consolidated Statements of Cash Flows
(In thousands of U.S. dollars)

	Year Ended December 31,		
	2017	2018	2019
Cash Flows From Operating Activities:			
Net loss and comprehensive loss for the year	\$ (7,796)	\$ (14,283)	\$ (27,216)
Adjustments to reconcile net loss to net cash used in operating activities:			
Share-based compensation expense	34	306	511
Depreciation expense	102	407	605
Change in fair value of Series A Preferred Shares tranche obligation	(180)	1,130	1,350
Change in fair value of convertible notes	1,605	—	—
Non-cash lease expense	—	—	362
Foreign exchange (gain) loss	(11)	306	(629)
Changes in operating assets and liabilities:			
Prepaid expenses and other current assets	(186)	(60)	(466)
Research and development tax credits receivable	(162)	(330)	(566)
Other receivables	(447)	(155)	(1,347)
Other non-current assets	(29)	2	(464)
Accounts payable	730	10	833
Accrued expenses and other current liabilities	272	69	611
Income tax payable	—	—	218
Operating lease liability, current portion	—	—	21
Operating lease liability, net of current portion	—	—	(394)
Deferred revenue	—	—	8,142
Other liabilities	61	(20)	—
Net cash used in operating activities	<u>(6,007)</u>	<u>(12,618)</u>	<u>(18,429)</u>
Cash Flows From Investing Activities:			
Purchase of property and equipment	(1,156)	(583)	(1,304)
Net cash used in investing activities	<u>(1,156)</u>	<u>(583)</u>	<u>(1,304)</u>
Cash Flows From Financing Activities:			
Proceeds from issuance of Series A Preferred Shares, net	28,958	—	20,995
Proceeds from issuance of Series B Preferred Shares, net	—	—	82,248
Proceeds from issuance of convertible notes	1,500	—	—
Net cash provided by financing activities	<u>30,458</u>	<u>—</u>	<u>103,243</u>
Effect of exchange rate fluctuations on cash held	7	(259)	566
Net Decrease In Cash And Restricted Cash	<u>23,302</u>	<u>(13,460)</u>	<u>84,076</u>
Cash and restricted cash at beginning of year	1,087	24,389	10,929
Cash and restricted cash at end of year	<u>\$24,389</u>	<u>\$ 10,929</u>	<u>\$ 95,005</u>
Reconciliation Of Cash And Restricted Cash			
Cash	24,281	\$ 10,731	\$ 94,797
Restricted cash	108	198	208
Total cash and restricted cash	<u>\$24,389</u>	<u>\$ 10,929</u>	<u>\$ 95,005</u>
Supplemental Disclosure Of Cash Flow Information:			
Property and equipment purchases in accounts payable	\$ 262	\$ 159	\$ 40
Conversion of convertible notes to Series A Preferred Shares	<u>\$ 4,455</u>	<u>\$ —</u>	<u>\$ —</u>
Right-of-use assets obtained in exchange for operating lease obligation	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 1,074</u>

The accompanying notes are an integral part of these consolidated financial statements

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

1. Organization and Nature of Business

Repare Therapeutics Inc. (“Repare” or the “Company”) is a precision medicine oncology company focused on the development of synthetic lethality-based therapies to patients with cancer. The Company was incorporated under the *Canada Business Corporations Act* on September 6, 2016.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying consolidated financial statements have been prepared in conformity with generally accepted accounting principles in the United States of America (“U.S. GAAP”). Any reference in these notes to applicable guidance is meant to refer to the authoritative U.S. GAAP as found in the Accounting Standards Codification (“ASC”) and as amended by Accounting Standards Updates (“ASU”) of the Financial Accounting Standards Board (“FASB”).

Principles of Consolidation

The accompanying consolidated financial statements of the Company include the accounts of the Company and its wholly-owned subsidiary, Repare Therapeutics USA Inc. (“Repare USA”), which was incorporated under the laws of Delaware on June 1, 2017. The financial statements of Repare USA are prepared for the same reporting period as the parent company, using consistent accounting policies. All intra-group transactions, balances, incomes and expenses are eliminated in full upon consolidation.

Foreign Currencies

The functional currency for the Company and Repare USA is the U.S. dollar (“USD”). Accordingly, transactions denominated in currencies other than the functional currency are measured and recorded in the functional currency at the exchange rate in effect on the date of the transactions. At each consolidated balance sheet date, monetary assets and liabilities denominated in currencies other than the functional currency are remeasured using the exchange rate in effect at that date. Non-monetary assets and liabilities and revenue and expense items denominated in foreign currencies are translated into the functional currency using the exchange rate prevailing at the dates of the respective transactions. Any gains or losses arising on remeasurement are included in the consolidated statement of operations.

Segment Information

The Company manages its operations as a single operating segment for the purposes of assessing performance and making operating decisions. The Company’s singular focus is the research, development and commercialization of precision oncology drugs targeting specific vulnerabilities of tumors in genetically defined patient populations.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in consolidated financial statements and accompanying notes. Significant estimates and assumptions reflected in these consolidated financial statements include, but are not limited to, accrued research and development expenses, share-based compensation and the measurement of the fair value of the Company’s Series A Preferred Share Tranche Obligation (as defined in

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

Note 3). Estimates are periodically reviewed in light of changes in circumstances, facts and experience. Changes in estimates are recorded in the period in which they become known. Actual results could differ from those estimates.

Restricted Cash

As of December 31, 2018 and 2019, restricted cash consisted of \$198 and \$208, respectively, used to secure a letter of credit denominated in a foreign currency for the benefit of the landlord in connection with one of the Company's lease agreements (Note 7).

Concentrations of Credit Risk and Off-Balance Sheet Risk

Financial instruments that potentially expose the Company to concentrations of credit risk consist primarily of cash. The Company maintains deposits in accredited financial institutions which may periodically exceed insured limits. The Company deposits its cash in financial institutions that it believes have high credit quality and has not experienced any losses on such accounts and does not believe it is exposed to any unusual credit risk beyond the normal credit risk associated with commercial banking relationships.

The Company's exposure to foreign exchange risk is primarily related to fluctuations between the Canadian dollar and the USD. There are balances in Canadian dollars which are subject to foreign currency fluctuations relating to the impact of translating to USD for financial statement presentation.

As of December 31, 2018 and 2019, the Company had no significant off-balance sheet risk, such as foreign exchange contracts, option contracts or other foreign hedging arrangements.

Comprehensive Loss

Comprehensive loss includes net loss as well as other changes in shareholders' deficit that result from transactions and economic events other than those with shareholders. For each of the years ended December 31, 2017, 2018 and 2019, comprehensive loss was equal to net loss.

Fair Value Measurements

Certain assets and liabilities of the Company are carried at fair value under U.S. GAAP. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. Financial assets and liabilities carried at fair value are to be classified and disclosed in one of the following three levels of the fair value hierarchy, of which the first two are considered observable and the last is considered unobservable:

- Level 1 – Quoted prices in active markets for identical assets or liabilities.
- Level 2 – Observable inputs (other than Level 1 quoted prices), such as quoted prices in active markets for similar assets or liabilities, quoted prices in markets that are not active for identical or similar assets or liabilities, or other inputs that are observable or can be corroborated by observable market data.
- Level 3 – Unobservable inputs that are supported by little or no market activity that are significant to determining the fair value of the assets or liabilities, including pricing models, discounted cash flow methodologies and similar techniques.

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

To the extent that the valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires more judgment. Accordingly, the degree of judgment exercised by the Company in determining fair value is greatest for instruments categorized in Level 3. Financial assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurement.

An entity may choose to measure financial instruments and certain other items at fair value at specified election dates. Subsequent unrealized gains and losses on items for which the fair value option has been elected will be reported in earnings.

The estimated fair values of the Company's cash, restricted cash, other assets, accounts payable and accrued expenses and other current liabilities approximate their carrying values.

The Company's Series A Preferred Share Tranche Obligation liabilities are carried at fair value, determined according to Level 3 inputs in the fair value hierarchy described above. In January 2019, in connection with the closing of the second tranche of Series A Preferred Shares, the liability related to the Series A second tranche obligation was settled. In September 2019, in connection with the Company's issuance and sale of Series B Preferred Shares, the liability related to the Series A third tranche obligation was terminated (Notes 3 and 8).

Property and Equipment, Net

Property and equipment is stated at historical cost, net of accumulated depreciation. Depreciation is calculated using the straight-line method over the estimated useful lives of the assets, which are as follows:

<u>Asset Category</u>	<u>Estimated Useful Lives</u>
Computer equipment	3 years
Office equipment	5 years
Laboratory equipment	5 years
Leasehold improvements	the shorter of the lease term and the useful life

When assets are retired or disposed of, the assets and related accumulated depreciation are derecognized from the accounts, and any resulting gain or loss is included in the determination of net loss. Expenditures for maintenance and repairs are recorded to expense as incurred.

Impairment of Long-Lived Assets

The Company evaluates its finite-lived intangible assets for impairment whenever events or changes in circumstances indicate that the carrying value of assets may not be recoverable. Recoverability of these assets is measured by comparing their carrying value to the future net undiscounted cash flows the assets are expected to generate over their remaining economic life. If such assets are considered impaired, the impairment to be recognized is measured by the amount by which the carrying value of the assets exceeds their fair value. Indefinite-lived intangible assets are tested for impairment annually, or more frequently if indicators of impairment are present. To date, no such impairment losses have been recorded.

Fair Value Option for Convertible Notes

The Company elected the fair value option to account for its convertible notes issued during 2017 (the "Convertible Notes"). The Company recorded the Convertible Notes at fair value and subsequently remeasured

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

them to fair value at each reporting date. Changes in fair value were recognized as a component of other income (expense), net in the consolidated statements of operations and comprehensive loss. As a result of applying the fair value option, direct costs and fees related to the Convertible Notes were recognized in earnings as incurred and not deferred.

Leases

Effective January 1, 2019, the Company elected to early adopt ASU No. 2016-02, Leases (Topic 842), (“ASU No. 2016-02” or “ASC 842”), using the modified retrospective approach and utilized the effective date as its date of initial application, with prior periods presented in accordance with the previous guidance under ASC 840, Leases (“ASC 840”).

At the inception of an arrangement, the Company determines whether the arrangement is or contains a lease based on the unique facts and circumstances present in the arrangement. Leases with a term greater than one year are recognized on the consolidated balance sheet as a right-of-use asset and current and non-current lease liabilities, as applicable.

Operating lease liabilities and their corresponding right-of-use assets are initially recorded based on the present value of lease payments over the expected remaining lease term. Certain adjustments to the right-of-use asset may be required for items such as incentives received. The interest rate implicit in lease contracts is typically not readily determinable. As a result, the Company utilizes its incremental borrowing rate to discount lease payments, which reflects the fixed rate at which the Company could borrow on a collateralized basis the amount of the lease payments in the same currency, for a similar term, in a similar economic environment. Prospectively, the Company will adjust the right-of-use assets for straight-line rent expense or any incentives received and remeasure the lease liability at the net present value using the same incremental borrowing rate that was in effect as of the lease commencement or transition date.

The Company has elected not to recognize leases with an original term of one year or less on the consolidated balance sheet. The Company typically only includes an initial lease term in its assessment of a lease arrangement. Options to renew a lease are not included in the Company’s assessment unless there is reasonable certainty that the Company will renew.

Assumptions made by the Company at the commencement date are re-evaluated upon occurrence of certain events, including a lease modification. A lease modification results in a separate contract when the modification grants the lessee an additional right of use not included in the original lease and when lease payments increase commensurate with the standalone price for the additional right of use. When a lease modification results in a separate contract, it is accounted for in the same manner as a new lease.

The Company elected the following practical expedients, which must be elected as a package and applied consistently to all of its leases at the transition date (including those for which the entity is a lessee or a lessor): i) the Company did not reassess whether any expired or existing contracts are or contain leases; ii) the Company did not reassess the lease classification for any expired or existing leases (that is, all existing leases that were classified as operating leases in accordance with ASC 840 are classified as operating leases, and all existing leases that were classified as capital leases in accordance with ASC 840 are classified as finance leases); and iii) the Company did not reassess initial direct costs for any existing leases.

For leases that existed prior to the date of initial application of ASC 842 (which were previously classified as operating leases), a lessee may elect to use either the total lease term measured at lease inception under ASC 840

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

or the remaining lease term as of the date of initial application of ASC 842 in determining the period for which to measure its incremental borrowing rate. In transition to ASC 842, the Company utilized the remaining lease term of its leases in determining the appropriate incremental borrowing rates.

In accordance with ASC 842, components of a lease should be split into three categories: lease components, non-lease components and non-components. The fixed and in-substance fixed contract consideration (including any consideration related to non-components) must be allocated based on the respective relative fair values to the lease components and non-lease components.

Entities may elect not to separate lease and non-lease components. The Company has elected to account for lease and non-lease components together as a single lease component for all underlying assets and allocate all of the contract consideration to the lease component only.

Revenue Recognition

The Company recognizes revenue in accordance with ASC 606, Revenue from Contracts with Customers (“ASC 606”). This standard applies to all contracts with customers, except for contracts that are within the scope of other standards, such as leases, insurance, collaboration arrangements and financial instruments. Under ASC 606, an entity recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements that an entity determines are within the scope of ASC 606, the entity performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. The Company only applies the five-step model to contracts when it is probable that the entity will collect the consideration it is entitled to in exchange for the goods or services it transfers to the customer. At contract inception, once the contract is determined to be within the scope of ASC 606, the Company assesses the goods or services promised within each contract and determines those that are performance obligations and assesses whether each promised good or service is distinct. The Company then recognizes as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied.

The Company enters into collaboration and license agreements, which are within the scope of ASC 606, to discover, develop, manufacture and commercialize product candidates. The terms of these agreements typically contain multiple promises or obligations, which may include: (i) licenses to compounds directed to specific targets (referred to as “exclusive licenses”) and (ii) research and development activities to be performed on behalf of the collaboration partner related to the licensed targets. Payments to the Company under these agreements may include non-refundable license fees, customer option exercise fees, payments for research activities, reimbursement of certain costs, payments based upon the achievement of certain milestones and royalties on any resulting net product sales.

The Company first evaluates license and/or collaboration arrangements to determine whether the arrangement (or part of the arrangement) represents a collaborative arrangement pursuant to ASC 808, Collaborative Arrangements (“ASC 808”), based on the risks and rewards and activities of the parties pursuant to the contractual arrangement. The Company accounts for collaborative arrangements (or elements within the contract that are deemed part of a collaborative arrangement), which represent a collaborative relationship and not a customer relationship, outside the scope of ASC 606. The Company’s collaborations primarily represent revenue arrangements. For the arrangements or arrangement components that are subject to revenue accounting guidance,

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

In determining the appropriate amount of revenue to be recognized as it fulfills its obligations under each of its agreements, the Company applies the five-step model. As part of the accounting for these arrangements, the Company must use significant judgment to determine: a) the number of performance obligations based on the determination under step (ii) above and whether those performance obligations are distinct from other performance obligations in the contract; b) the transaction price under step (iii) above; and c) the stand-alone selling price for each performance obligation identified in the contract for the allocation of transaction price in step (iv) above. The Company uses judgment to determine whether milestones or other variable consideration, except for sales-based royalties, should be included in the transaction price as described further below. The transaction price is allocated to each performance obligation on a relative stand-alone selling price basis, for which the Company recognizes revenue as or when the performance obligations under the contract are satisfied. In determining the stand-alone selling price of a license to the Company's proprietary technology or a material right provided by a customer option, the Company considers market conditions as well as entity-specific factors, including those factors contemplated in negotiating the agreements as well as internally developed estimates that include assumptions related to the market opportunity, estimated development costs, probability of success and the time needed to commercialize a product candidate pursuant to the license. In validating its estimated stand-alone selling price, the Company evaluates whether changes in the key assumptions used to determine its estimated stand-alone selling price will have a significant effect on the allocation of arrangement consideration between performance obligations.

Amounts received prior to revenue recognition are recorded as deferred revenue. Amounts expected to be recognized as revenue within one year following the balance sheet date are classified as current portion of deferred revenue in the accompanying consolidated balance sheets. Amounts not expected to be recognized as revenue within one year following the balance sheet date are classified as deferred revenue, net of current portion. Amounts recognized as revenue, but not yet received or invoiced are generally recognized as contract assets.

Exclusive Licenses – If the license to the Company's intellectual property is determined to be distinct from the other promises or performance obligations identified in the arrangement, which generally include research and development services, the Company recognizes revenue from non-refundable, upfront fees allocated to the license when the license is transferred to the customer and the customer is able to use and benefit from the license. In assessing whether a license is distinct from the other promises, the Company considers relevant facts and circumstances of each arrangement, including the research and development capabilities of the collaboration partner and the availability of the associated expertise in the general marketplace. In addition, the Company considers whether the collaboration partner can benefit from the license for its intended purpose without the receipt of the remaining promises, whether the value of the license is dependent on the unsatisfied promises, whether there are other vendors that could provide the remaining promises and whether it is separately identifiable from the remaining promises. For licenses that are combined with other promises, the Company utilizes judgment to assess the nature of the combined performance obligation and whether the license is the predominant promise within the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue. If the license is the predominant promise, and it is determined that the license represents functional intellectual property ("IP"), revenue is recognized at the point in time when control of the license is transferred. If it is determined that the license does not represent functional IP, revenue is recognized over time using an appropriate method of measuring progress.

Research and Development Services – The obligations under the Company's collaboration and license agreements generally include research and development services to be performed by the Company to benefit the collaboration partner. For performance obligations that include research and development services, the Company

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

generally recognizes revenue allocated to such performance obligations based on an appropriate measure of progress. The Company utilizes judgment to determine the appropriate method of measuring progress for purposes of recognizing revenue, which is generally an input measure such as costs incurred. The Company evaluates the measure of progress each reporting period and, if necessary, adjusts the measure of performance and related revenue recognition. The measure of progress, and thereby periods of which revenue should be recognized, are subject to estimates by management and may change over the course of the contract. Reimbursements from the partner that are the result of a collaborative relationship with the partner, instead of a customer relationship, such as co-development activities, are recorded as a reduction to research and development expense.

Customer Options – The Company’s arrangements may provide a collaborator with the right to acquire additional goods or services in the future. Under these agreements, fees may be due to the Company (i) at the inception of the arrangement as an upfront fee or payment or (ii) upon the exercise of the customer option. If an arrangement is determined to contain customer options that allow the customer to acquire additional goods or services, the goods and services underlying the customer options are not considered to be performance obligations at the outset of the arrangement, as they are contingent upon option exercise. The Company evaluates the customer options for material rights, or options to acquire additional goods or services for free or at a discount. If the customer options are determined to represent a material right, the material right is recognized as a separate performance obligation at the inception of the arrangement. The Company allocates the transaction price to material rights based on the relative stand-alone selling price, which is determined based on the identified discount and the probability that the customer will exercise the option. Amounts allocated to a material right are not recognized as revenue until, at the earliest, the option is exercised or expires.

Milestone Payments – At the inception of each arrangement that includes development milestone payments, the Company evaluates whether the milestones are considered probable of being achieved and estimates the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within the control of the Company or the licensee, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. The Company evaluates factors such as the scientific, clinical, regulatory, commercial and other risks that must be overcome to achieve the particular milestone in making this assessment. There is considerable judgment involved in determining whether it is probable that a significant revenue reversal would not occur. At the end of each subsequent reporting period, the Company reevaluates the probability of achievement of all milestones subject to constraint and, if necessary, adjusts its estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect revenues and earnings in the period of adjustment. If a milestone or other variable consideration relates specifically to the Company’s efforts to satisfy a single performance obligation or to a specific outcome from satisfying the performance obligation, the Company generally allocates the milestone amount entirely to that performance obligation once it is probable that a significant revenue reversal would not occur.

Royalties – For arrangements that include sales-based royalties, including milestone payments based on a level of sales, and the license is deemed to be the predominant item to which the royalties relate, the Company recognizes revenue at the later of (i) when the related sales occur or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied). To date, the Company has not recognized any royalty revenue resulting from any of its licensing arrangements.

For a complete discussion of accounting for collaboration revenues, see Note 10.

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

Research and Development Expenses

Research and development costs are expensed as incurred. The Company's research and development expenses consist primarily of costs incurred in performing research and development activities, including salaries and other compensation, share-based compensation, fees paid to external service providers, laboratory supplies and costs for facilities and equipment, partially offset by fully-refundable research and development tax credits. Non-refundable prepayments for goods or services that will be used or rendered for future research and development activities are deferred and capitalized. Such amounts are expensed as the goods are delivered or the services are performed, or until it is no longer expected that the goods will be delivered or the services rendered.

Accrued Research and Development Expenses

The Company has entered into various research and development contracts. The payments to these agreements are recorded as research and development expenses as incurred. The Company records accrued liabilities for estimated ongoing research costs. When evaluating the adequacy of the accrued liabilities, the Company analyzes progress of the studies, including the phase or completion of events, invoices received and contracted costs. Significant judgements and estimates are made in determining the accrued balances at the end of any reporting period. Actual results could differ from the Company's estimates.

Share-Based compensation

The Company accounts for all share-based awards granted to employees and non-employees as share-based compensation expense at fair value.

The Company engages an independent valuation firm to determine the fair value of the underlying common shares. The independent valuation firm uses valuation techniques and methods that comply with guidance provided by the American Institute of Certified Public Accountants in its Accounting & Valuation Guide. Each valuation methodology includes estimates and assumptions that require the Company's judgment. These estimates and assumptions include a number of objective and subjective factors in determining the value of the Company's common shares at each grant date, including: (1) prices paid for the Company's convertible preferred shares, which the Company has sold to outside investors in arm's-length transactions, and the rights, preferences and privileges of the Company's convertible preferred shares and common shares; (2) valuations performed by an independent valuation specialist; (3) the Company's stage of development; (4) the fact that grants of share-based awards involved illiquid securities in a private company; and (5) the likelihood of achieving a liquidity event for the common shares underlying the share-based awards, such as an initial public offering or sale of the Company, given prevailing market conditions.

The measurement date for employee and non-employee awards is the date of grant, and share-based compensation costs are recognized over the employees' requisite service period, which is the vesting period, on a straight-line basis.

The fair value of each stock option grant is estimated on the date of grant using the Black-Scholes option-pricing model, which requires inputs based on certain subjective assumptions, including the expected share price volatility, the expected term of the option, the risk-free interest rate for a period that approximates the expected term of the option and the Company's expected dividend yield. As there is no public market for its common shares, the Company determines the volatility for awards granted based on an analysis of reported data for a group of guideline companies that issued options with substantially similar terms. The expected volatility has been determined using a weighted-average of the historical volatility measures of this group of guideline

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

companies. The Company expects to continue to do so until such time as it has adequate historical data regarding the volatility of its own traded share price. The expected term of the Company's stock options granted to employees and non-employees has been determined utilizing the "simplified" method for awards that qualify as "plain-vanilla" options. In connection with the adoption of ASU No. 2018-07, Compensation—Stock Compensation ("ASU No. 2018-07"), the Company calculated the expected term of non-employee awards using the midpoint between the vesting date and the contractual term, which is consistent with the method used for employee awards. The risk-free interest rate is determined by reference to the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award. The Company has not paid, and does not anticipate paying, cash dividends on its common shares; therefore, the expected dividend yield is assumed to be zero.

Share-based compensation is classified in the accompanying consolidated statements of operations and comprehensive loss based on the function to which the related services are provided. Forfeitures are accounted for as they occur. Any consideration paid by employees on exercising stock options and the corresponding portion previously credited to additional paid-in capital are credited to share capital.

Classification of Convertible Preferred Shares

The Company's convertible preferred shares are classified outside of shareholders' deficit because the holders of such shares have liquidation rights in the event of a deemed liquidation that, in certain situations, are not solely within the control of the Company. The Company records convertible preferred shares at fair value upon issuance, net of any issuance costs or discounts.

Share Issuance Costs

Share issuance costs applicable to the issuance of equity instruments are recorded as a reduction of the financing equity proceeds.

Net Loss per Share and Unaudited Pro Forma Loss per Share

Basic net loss per share attributable to common shareholders is computed by dividing the net loss attributable to common shareholders by the weighted-average number of common shares outstanding during the reporting period, without consideration for potentially dilutive securities. Diluted net loss per share is computed by dividing the net loss attributable to common shareholders by the weighted-average number of common shares and potentially dilutive securities outstanding during the period determined using the treasury-stock and if-converted methods. For purposes of the diluted net loss per share calculation, convertible preferred shares and stock options considered to be potentially dilutive securities were excluded from the calculation of diluted net loss per share because their effect would be anti-dilutive and therefore, basic and diluted net loss per share were the same for all reporting periods presented.

Unaudited pro forma net loss per share attributable to common shareholders is computed using the weighted-average number of common shares outstanding after giving effect to the conversion of all outstanding convertible preferred shares into common shares as if such conversion had occurred on January 1, 2019, or the date of issuance, if later.

Income Taxes

The Company recognizes deferred tax assets and liabilities for the expected future tax consequences of events that have been recognized in the Company's consolidated financial statements. Under this method, deferred tax

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

assets and liabilities are determined based on differences between the consolidated financial statement carrying amounts and the tax bases of the assets and liabilities using the enacted tax rates in effect in the years in which the differences are expected to reverse. A valuation allowance against deferred tax assets is recorded if, based on the weight of the available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

The Company accounts for uncertainty in income taxes recognized in the financial statements by applying a two-step process to determine the amount of tax benefit to be recognized. First, the tax position must be evaluated to determine the likelihood that it will be sustained upon external examination by the taxing authorities. If the tax position is deemed more-likely-than-not to be sustained, the tax position is then assessed to determine the amount of benefit to recognize in the financial statements. The amount of benefit that may be recognized is the largest amount that has a greater than 50% likelihood of being realized upon ultimate settlement. The provision for income taxes includes the effects of any resulting tax reserves, or unrecognized tax benefits, that are considered appropriate as well as the related net interest and penalties.

Research and Development Tax Credits

The Company recognizes the benefit of refundable Canadian research and development tax credits as a reduction of research and development costs when there is reasonable assurance that the amount claimed will be recovered.

Emerging Growth Company Status

The Company is an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act, or JOBS Act, and may take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies. Section 107 of the JOBS Act provides that an emerging growth company can take advantage of the extended transition period afforded by the JOBS Act for the implementation of new or revised accounting standards. The Company has elected to use the extended transition period for complying with new or revised accounting standards and as a result of this election, its consolidated financial statements may not be comparable to companies that comply with public company effective dates. The Company may take advantage of these exemptions up until the last day of the fiscal year following the fifth anniversary of an initial public offering or such earlier time that it is no longer an emerging growth company.

Recently Adopted Accounting Pronouncements

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606) (“ASU No. 2014-09”), which modifies how all entities recognize revenue, and consolidates into one ASC (ASC 606) the current guidance found in ASC Topic 605, and various other revenue accounting standards for specialized transactions and industries. ASU No. 2014-09 outlines a comprehensive five-step revenue recognition model based on the principle that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. ASU No. 2014-09 may be applied using either a full retrospective approach, under which all years included in the consolidated financial statements will be presented under the revised guidance, or a modified retrospective approach, under which consolidated financial statements will be prepared under the revised guidance for the year of adoption, but not for prior years. The Company elected to early adopt this pronouncement as of January 1, 2017. The adoption of ASU No. 2014-09 had no impact on its consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, which requires an entity to recognize assets and liabilities arising from a lease for both financing and operating leases on their balance sheet date. In July 2018, an

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

amendment was made that allows companies the option of using the effective date of the new standard as the initial application date (at the beginning of the period in which the new standard is adopted, rather than at the beginning of the earliest comparative period). This update includes a short-term lease exception for leases with a term of 12 months or less, in which a lessee can make an accounting policy election not to recognize the associated lease assets and lease liabilities on its balance sheet. Additionally, in March 2019, the FASB issued ASU No. 2019-01, Leases (Topic 842): Codification Improvements (“ASU No. 2019-01”). ASU No. 2019-01 clarifies the transition guidance related to interim disclosures provided in the year of adoption. Lessees will continue to differentiate between finance leases (previously referred to as capital leases) and operating leases, using classification criteria that are substantially similar to the previous guidance. For lessees, the recognition, measurement and presentation of expenses and cash flows arising from a lease did not significantly change from previous U.S. GAAP. The modified retrospective method includes several optional practical expedients that entities may elect to apply, as well as transition guidance specific to nonstandard leasing transactions. The Company elected to early adopt Topic 842 on January 1, 2019 using a cumulative-effect adjustment on the effective date of the standard, for which comparative periods are presented in accordance with the previous guidance under ASC 840.

In adopting ASC 842, the Company elected to utilize the available package of practical expedients permitted under the transition guidance within the new standard, which does not require the reassessment of the following: i) whether existing or expired arrangements are or contain a lease, ii) the lease classification of existing or expired leases, and iii) whether previous initial direct costs would qualify for capitalization under the new lease standard. Additionally, the Company made an accounting policy election to keep leases with a term of 12 months or less off its consolidated balance sheet.

Adoption of this standard resulted in the recording of operating lease liabilities and right-of-use assets of \$306 and \$347, respectively, on the Company’s consolidated balance sheet on the effective date. The adoption of the standard did not have a material effect on the Company’s consolidated statements of operations and comprehensive loss, consolidated statements of cash flows or accumulated deficit. Refer to Note 7 for right-of-use asset and liabilities recorded during the year ended December 31, 2019.

In August 2016, the FASB issued ASU No. 2016-15, Statement of Cash Flows: Classification of Certain Cash Receipts and Cash Payments (“ASU No. 2016-15”), to address diversity in practice in how certain cash receipts and cash payments are presented and classified in the consolidated statement of cash flows. The Company elected to early adopt ASU No. 2016-15 as of January 1, 2019. The adoption of ASU No. 2016-15 did not have a material impact on its consolidated financial statements.

In November 2016, FASB issued ASU No. 2016-18, Statements of Cash Flows (Topic 230): Restricted Cash (“ASU No. 2016-18”). The Amendments in ASU No. 2016-18 require that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. Therefore, amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of period total amounts shown on the statement of cash flows. The Company elected to early adopt ASU No. 2016-18 as of January 1, 2017. The adoption of ASU No. 2016-18 did not have a material impact on its consolidated financial statements.

In May 2017, the FASB issued ASU No. 2017-09, Compensation—Stock Compensation (Topic 718): Scope of Modification Accounting (“ASU No. 2017-09”), which clarifies when to account for a change to the terms or conditions of a share-based payment award as a modification. Under the new guidance, modification accounting is required only if the fair value, the vesting conditions, or the classification of the award (as equity or liability)

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

changes as a result of the change in terms or conditions. The standard is effective for annual periods beginning after December 15, 2017. Early adoption is permitted, including adoption in any interim period, for (1) public business entities for reporting periods for which financial statements have not yet been issued and (2) all other entities for reporting periods for which financial statements have not yet been made available for issuance. The Company elected to early adopt ASU No. 2017-09 as of January 1, 2017. The adoption of ASU No. 2017-09 had no impact on its consolidated financial statements.

In June 2018, the FASB issued ASU No. 2018-07, which aligns the measurement and classification guidance for share-based payments to non-employees with that for employees, with certain exceptions. It expands the scope of ASC 718 to include share-based payments granted to non-employees in exchange for goods or services used or consumed in the entity's own operations and supersedes the guidance in ASC 505-50. ASU No. 2018-07 retains the existing cost attribution guidance, which requires entities to recognize compensation cost for non-employee awards in the same period and in the same manner (i.e., capitalize or expense) they would if they paid cash for the goods or services, but it moves the guidance to ASC 718. The guidance also allows nonpublic entities to account for non-employee awards using certain practical expedients that are already available for employee awards, but the same accounting policies must be used for awards to both employees and non-employees. ASU No. 2018-07 is effective for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years. Early adoption is permitted. The Company elected to early adopt ASU No. 2018-07 as of January 1, 2017. The adoption of ASU No. 2018-07 did not have an impact on the Company's consolidated financial statements as the Company had not yet granted any non-employee awards.

Recently Issued Accounting Pronouncements

In December 2019, the FASB issued ASU No. 2019-12, Income Taxes-Simplifying the Accounting for Income Taxes ("ASU No. 2019-12"). ASU No. 2019-12 eliminates certain exceptions related to the approach for intra-period tax allocation, the methodology for calculating income taxes in an interim period and the recognition of deferred tax liabilities for outside basis differences. The new guidance also simplifies aspects of the accounting for franchise taxes and enacted changes in tax laws or rates and clarifies the accounting for transactions that result in a step-up in the tax basis of goodwill. For public entities, ASU No. 2019-12 is effective for annual periods beginning after December 15, 2020, including interim periods within. For all other entities, this pronouncement is effective for fiscal years beginning after December 15, 2021, including interim periods within fiscal years beginning after December 15, 2022. Early adoption is permitted for all entities. Adoption of the standard requires certain changes to be made prospectively, with some changes to be made retrospectively. The Company is currently assessing the impact of this standard on its financial condition and results of operations.

3. Fair Value Measurements

The following table presents information about the Company's financial assets and liabilities measured at fair value on a recurring basis and indicates the level of the fair value hierarchy utilized to determine such fair values as of December 31, 2018:

<u>Description</u>	<u>December 31, 2018</u>	<u>Quoted Prices in Active Markets for Identical Assets (Level 1)</u>	<u>Significant Other Observable Inputs (Level 2)</u>	<u>Significant Other Observable Inputs (Level 3)</u>
Liabilities				
Series A Preferred Share Tranche Obligation	\$ 2,490	\$ —	\$ —	\$ 2,490
Total financial liabilities	\$ 2,490	\$ —	\$ —	\$ 2,490

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

During the year ended December 31, 2018, there were no transfers between fair value measure levels. The Company's Series A Preferred Share Tranche Obligation is carried at fair value measured using Level 3 inputs in the fair value hierarchy as described above. In connection with the Company's issuance and sale of Series B Preferred Shares in September 2019, the Series A Preferred Share Tranche Obligation was terminated.

The Company had no financial assets and liabilities carried at fair value as of December 31, 2019.

Series A Preferred Share Tranche Obligation

The Company determined that its obligation to issue, and the Company's investors' obligation to purchase, additional Series A Preferred Shares at a fixed price (i.e., the issuance price) in subsequent tranches following the initial closing of the Series A Preferred Share financing represented a freestanding financial instrument, the Series A Preferred Share Tranche Obligation. The freestanding financial instrument was classified as an asset or liability on the Company's consolidated balance sheets and initially recorded at fair value, with changes in fair value for each reporting period recognized in other income (expense), net in the consolidated statements of operations and comprehensive loss (Note 8).

In connection with the Company's issuance of the Series A Preferred Shares in June 2017 (Note 8), the Company recognized the Series A Preferred Share Tranche Obligation at the initial fair value which was determined based on significant inputs not observable in the market, which represents a Level 3 measurement within the fair value hierarchy. The fair value of the obligation was estimated based on results of a third-party valuation. This obligation is remeasured prior to the issuance of subsequent tranches and at each subsequent reporting period. As such, the proceeds from the Series A Preferred Share financing were allocated between the Series A Preferred Share Tranche Obligation and Series A Preferred Shares using the residual method, with the Series A Preferred Share Tranche Obligation being recorded at its fair value and the Series A Preferred Shares at the residual value.

Each tranche obligation is valued as a forward contract. The values were determined using a probability-weighted present value calculation. In determining the fair values of the tranche obligations, estimates and assumptions impacting fair value included the estimated future values of the Company's Series A Preferred Shares, discount rates, estimated time to liquidity and probability of each tranche closing. The Company determined the per share future value of the Series A Preferred Shares by back-solving to the initial proceeds of the Series A Preferred Share financing. The Company remeasured each tranche obligation at each reporting period and prior to settlement. The following reflects the significant quantitative inputs used in the valuation of the Series A Preferred Share Tranche Obligation:

	December 31,	
	2017	2018
Estimated future value of Series A Preferred Shares	\$ 4.85	\$ 5.46
Discount rate	30.00%	25.00%
Time to liquidity (years)	4.00	2.50
Probability of tranche closing	90% – 95%	90% – 99%

A change in the assumptions related to the valuation of the Series A Preferred Share Tranche Obligation could have a significant impact on the value of the obligation.

The Company recorded other income of \$180 and other expense of \$1,130 and \$1,350 for changes in the fair value of the Series A Preferred Share Tranche Obligation in the consolidated statements of operations and comprehensive loss for the years ended December 31, 2017, 2018 and 2019, respectively.

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

Convertible Notes

The Company elected the fair value option to account for its Convertible Notes issued during 2016 and 2017. The fair value of the Convertible Notes was determined based on significant inputs not observable in the market, which represents a Level 3 measurement within the fair value hierarchy.

The Company determined the fair value of the Convertible Notes based on the proceeds received for the Convertible Notes, the terms of the Convertible Notes, including the rate at which the notes convert into qualified equity financing securities, the probability and timing of a qualified equity financing and the fair value of the underlying preferred shares. Estimates and assumptions impacting the fair value measurement include the probability of a qualified equity financing as defined in the convertible notes agreement, the expected timing of such event and the then fair value of the Company's Series A Preferred Shares. The Company estimated the probability and timing of the qualified equity financing based on management's assumptions and knowledge of specified events at issuance and as of each reporting date. The Company determined the fair value per share of the Series A Preferred Shares as described above.

In June 2017, in connection with the Company's issuance and sale of Series A Preferred Shares, the outstanding principal under the Convertible Notes was automatically converted into shares of Series A Preferred Shares and the Convertible Notes liability was extinguished. The Company recorded other expense of \$1,615 for changes in the fair value of the Convertible Notes in the consolidated statements of operations and comprehensive loss for the year ended December 31, 2017.

The following table provides a roll forward of the aggregate fair value of the Company's Series A Preferred Share Tranche Obligation and Convertible Notes, for which fair value was determined using Level 3 inputs:

	Series A Preferred Share Tranche Obligation	Convertible Notes
Balance as of January 1, 2017	\$ —	\$ 1,350
Issuance of obligation	1,540	1,500
Change in fair value plus accrued interest	(180)	1,650
Settlement of obligation	—	(4,455)
Accrued interest to accounts payable	—	(45)
Balance as of December 31, 2017	<u>\$ 1,360</u>	<u>\$ —</u>
Change in fair value	1,130	
Balance as of December 31, 2018	<u>\$ 2,490</u>	
Change in fair value	1,350	
Tranche 2 settlement of obligation	(880)	
Tranche 3 termination	(2,960)	
Balance as of December 31, 2019	<u>\$ —</u>	

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

4. Property and Equipment, Net

Property and equipment, net as of December 31, 2018 and 2019 consisted of the following:

	December 31,	
	2018	2019
Computer equipment	\$ 125	\$ 256
Office equipment	59	177
Laboratory equipment	1,490	2,565
Leasehold improvements	468	488
Total	2,142	3,486
Less: Accumulated depreciation	(490)	(1,096)
Property and equipment, net	<u>\$1,652</u>	<u>\$ 2,390</u>

The Company recognized depreciation expense of \$102, of which \$95 was included in research and development expense and \$7 was included in general and administrative expense, \$407, of which \$380 was included in research and development expense and \$27 was included in general and administrative expense, and \$606, of which \$539 was included in research and development expense and \$67 was included in general and administrative expense, for the years ended December 31, 2017, 2018 and 2019, respectively.

5. Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities as of December 31, 2018 and 2019 consisted of the following:

	December 31,	
	2018	2019
Accrued compensation and benefits	\$411	\$1,043
Accrued research and development expense	111	208
Accrued professional services	106	21
Other	32	4
Total accrued expenses and other current liabilities	<u>\$660</u>	<u>\$1,276</u>

6. License Agreements

In December 2016, as further amended in February 2017 and amended and restated in July 2018, the Company entered into a license agreement (the "NYU Agreement") with New York University, pursuant to which the Company obtained a worldwide, royalty-bearing, exclusive license under certain patents and know-how of New York University to research, develop and commercialize products covered by such licensed patents. The Company is required to pay New York University an annual non-refundable license fee, which is creditable against future milestone and royalty payments. The Company is required to pay amounts up to approximately \$6,713 in the aggregate upon achievement of certain clinical and commercial milestones and pay a low single digit royalty on future net sales of any product covered by a licensed product and a lower-single digit royalty on future net sales of any product not covered by a licensed product. The NYU Agreement expires on the date of expiration of all royalty obligations.

Any potential future milestone or royalty payment amounts have not been accrued at December 31, 2019 due to the uncertainty related to the successful achievement of these milestones.

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

7. Leases

The Company has historically entered into lease arrangements for its facilities and certain equipment. As of December 31, 2019, the Company had three operating leases with required future minimum payments. In applying the transition guidance under ASC 842, the Company determined the classifications of these leases to be operating leases and recorded right-of-use assets and leases liabilities as of the effective date. The Company's leases generally do not include termination or purchase options.

Operating Leases

In June 2017, the Company entered into a lease agreement for office and laboratory space in Montreal, Quebec, for a four-year term, ending in July 2021. As required under the terms of the lease agreement, the lease requires a standby letter of credit in the amount of \$208, which remains unused as of December 31, 2019.

In November 2017, and further amended in April 2018, January 2019 and August 2019, the Company entered into a lease agreement for office and laboratory space located in Montreal, Quebec, for a three-year term ending in October 2020 with the option to extend through October 2022.

In June 2019, and further amended in August 2019, the Company entered into a lease agreement for office space in Cambridge, Massachusetts, for a two-year term, ending in May 2021.

In November 2019, the Company entered into a lease agreement for office and laboratory space located in Montreal, Quebec that has not commenced as of December 31, 2019. As required under the terms of the lease agreement, the Company had prepaid rent of \$522 as of December 31, 2019 and a commitment to prepay an additional \$522 prior to lease commencement, which the current portion was accounted for within prepaid expenses and other current assets and the long-term portion was accounted for within other assets.

The following table contains a summary of the lease costs recognized under ASC 842 and other information pertaining to the Company's operating leases for the year ended December 31, 2019:

	<u>December 31,</u> <u>2019</u>
Operating Leases	
Lease Cost	
Operating lease cost	\$ 411
Short-term lease cost	12
Variable lease cost	248
Total lease cost	<u>\$ 671</u>
	<u>December 31,</u> <u>2019</u>
Other Operating Lease Information	
Operating cash flows for operating leases	\$ 426
Right-of-use assets obtained in exchange for lease obligations	\$1,074
Weighted-average remaining lease term	1.79 years
Weighted-average discount rate	7.6%

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

The variable lease costs for the year ended December 31, 2019 include contingent rental usage, common area maintenance and other operating charges. As the Company's leases do not provide an implicit rate, the Company utilized its incremental borrowing rate to discount lease payments, which reflects the fixed rate at which the Company could borrow on a collateralized basis the amount of the lease payments in the same currency, for a similar term, in a similar economic environment.

Future minimum lease payments under the Company's operating leases as of December 31, 2019 were as follows:

	December 31, 2019
Maturity of Lease Liabilities	
2020	\$ 680
2021	368
2022	87
2023	—
2024	—
Thereafter	—
Total lease payments	1,135
Less: interest	(71)
Total lease liabilities	<u>\$ 1,064</u>

The table above excludes \$3,222 of legally binding minimum lease payments for the lease in Montreal, Quebec that has been executed but not yet commenced as of December 31, 2019.

As of December 31, 2018, future minimum lease payments under the Company's lease obligations under ASC 840 were as follows:

Year Ending December 31,	
2019	\$162
2020	154
2021	64
2022	—
Total	<u>\$380</u>

8. Convertible Preferred Shares

In June 2017, the Company authorized the issuance of an unlimited number of Series A Preferred Shares with no par value in connection with the sale and issuance of up to 13,237,696 Series A Preferred Shares. The Series A Preferred Share financing was structured to close in three tranches, each contingent upon the achievement of certain specified milestones.

In June 2017, in connection with the closing of the first tranche of Series A Preferred Shares, the Company issued 5,906,049 Series A Preferred Shares at \$4.91 per share for total proceeds of \$28,958, net of issuance costs of \$42 and converted previously issued and outstanding Convertible Notes amounting to \$4,455 issued in October 2016 and April 2017 into 907,291 Series A Preferred Shares. The terms included the obligation of the investors to purchase, and the Company to sell, up to 7,331,647 additional Series A Preferred Shares contingent

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

upon the achievement of certain specified milestones. The Company concluded that the obligation and right to make future issuances of Series A Preferred Shares met the definition of a freestanding financial instrument, as the rights were legally detachable from the Series A Preferred Shares (Note 3). In January 2019, in connection with the closing of the second tranche of Series A Preferred Shares, the Company issued 4,276,795 Series A Preferred Shares at \$4.91 per share for total gross proceeds of \$21,000, and the liability related to the Series A second tranche obligation was settled and recognized at fair value as Series A Preferred Shares.

In August 2019, the Company authorized the issuance of an unlimited number of Series B Preferred Shares with no par value. In September 2019, the Company issued 10,468,258 Series B Preferred Shares to existing and new investors at \$7.88 per share for total proceeds of \$82,496. In connection with the issuance and sale of Series B Preferred Shares, the Series A third tranche obligation liability was terminated and recognized as additional paid-in-capital.

The carrying value of the Series A Preferred Shares is based on the net proceeds received at initial issuance net of the fair value of the Series A Preferred Share Tranche Obligation. At issuance of the first and second tranches, no beneficial conversion features were present. The carrying value of the Series B Preferred Shares is based on the net proceeds received. At initial issuance, no beneficial conversion features were present.

As of December 31, 2017, 2018 and 2019, preferred shares consisted of the following in the table below:

	December 31, 2017			
	Preferred Shares Issued and Outstanding	Carrying Value	Liquidation Value	Common Shares Issuable Upon Conversion
Series A Preferred Shares	6,813,340	\$31,873	\$ 31,750	6,813,340
	<u>6,813,340</u>	<u>\$31,873</u>	<u>\$ 31,750</u>	<u>6,813,340</u>
	December 31, 2018			
	Preferred Shares Issued and Outstanding	Carrying Value	Liquidation Value	Common Shares Issuable Upon Conversion
Series A Preferred Shares	6,813,340	\$31,873	\$ 31,750	6,813,340
	<u>6,813,340</u>	<u>\$31,873</u>	<u>\$ 31,750</u>	<u>6,813,340</u>
	December 31, 2019			
	Preferred Shares Issued and Outstanding	Carrying Value	Liquidation Value	Common Shares Issuable Upon Conversion
Series A Preferred Shares	11,090,135	\$ 53,749	\$ 52,750	11,090,135
Series B Preferred Shares	10,468,258	82,248	82,496	10,468,258
	<u>21,558,393</u>	<u>\$ 135,997</u>	<u>\$ 135,246</u>	<u>21,558,393</u>

The following is a summary of the rights and privileges of the holders of the preferred shares as of December 31, 2019.

Voting Rights

The holders of preferred shares are entitled to vote, together with the holders of common shares, on all matters submitted to the shareholders for a vote and are entitled to the number of votes equal to the number of whole

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

common shares into which the preferred shares held by such holders could convert on the record date for determination of shareholders entitled to vote. Except for meetings at which only holders of another specified class are entitled to vote, the holders of preferred shares shall vote together with the holders of common shares and vote as a single class.

Dividends

The holders of the preferred shares are entitled to receive, prior and in preference to any dividends on any other common shares of the Company, noncumulative dividends of 8% per annum of the sum of the preferred shares issuance price and all declared but unpaid dividends accrued thereon only when and if declared by the board of directors.

Conversion

As of December 31, 2017, 2018 and 2019, the preferred shares were convertible into common shares on a one-to-one basis.

Each preferred share is convertible into common shares, at any time, at the option of the holder, and without the payment of additional consideration, at the applicable conversion ratio in effect for preferred shares, which is initially one-to-one and subject to adjustment for certain anti-dilutive events. In addition, each preferred share will be automatically converted into common shares at the applicable conversion ratio in effect for preferred shares upon either (i) the closing of a qualified initial public offering of its common shares at a price per share of at least \$15.76 per share (subject to adjustment for any share split, combination or dividend or distribution payable) resulting in \$50,000 or more in gross proceeds to the Company, or (ii) the election to convert the preferred shares by at least 70% of the holders of preferred shares.

Liquidation Rights

In the event of any liquidation, dissolution or winding-up of the affairs of the Company, or unless waived by 70% of the holders of preferred shares, a sale of the Company that results in a change of control or a sale of substantially all of the Company's assets or intellectual property, the holders of preferred shares are entitled to be paid, in priority to the holders of any other class of shares, a liquidation preference equal to the aggregate of all accrued but unpaid dividends on the preferred shares. After satisfying the liquidation preference, the holders of record of preferred shares shall be entitled to receive ratably with the holders of common shares the residual assets of the Company on an as-converted basis.

9. Common Shares

As of December 31, 2017, 2018 and 2019, the authorized capital shares of the Company was unlimited with no par value.

The following represents the historical common share transactions of the Company from its incorporation through December 31, 2019:

- In 2016, the Company issued 1,369,186 common shares for total proceeds of \$1.
- In 2016, the Company issued 60,211 common shares in exchange for the license of certain intellectual property, which was recorded as research and development expense upon issuance.
- In 2017, the Company issued 98,977 common shares in exchange of no consideration.

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

Each common share entitles the holder to one vote, together with the holders of Series A Preferred Shares, on all matters submitted to the shareholders for a vote. The holders of common shares are entitled to receive dividends, as may be declared by the board of directors, if any, subject to the preferential dividend rights of convertible preferred shares. Through December 31, 2019, no cash dividends have been declared or paid.

As of December 31, 2017, 2018 and 2019, the Company has reserved common shares for the potential conversion of outstanding Series A Preferred Shares, Series B Preferred Shares and exercise of stock options in the table below.

	December 31,		
	2017	2018	2019
Series A Preferred Shares	6,813,340	6,813,340	11,090,135
Series B Preferred Shares	—	—	10,468,258
Options to purchase common shares	822,658	907,315	3,505,119
Total	<u>7,635,998</u>	<u>7,720,655</u>	<u>25,063,512</u>

10. Collaborations

In January 2019, the Company entered into a research services, license and collaboration agreement (the “Ono Agreement”) with Ono Pharmaceutical Co., Ltd. (“Ono”), a Japanese pharmaceutical company, pursuant to which the Company and Ono have agreed to collaborate in the research of potential product candidates targeting Polq and the development of the Company’s small molecule Polq inhibitor program. The Company is primarily responsible for carrying out research activities to identify a product candidate, to be licensed to Ono, in accordance with a mutually agreed upon research plan during a research term that will end upon the earlier of the date of the first submission of an Investigational New Drug application (“IND”) in the United States or Japan, or the end of the research term. In the event that Ono elects to collaborate on the subsequent development and commercialization of the proposed product candidate, Ono will be then responsible for such activities in Japan, South Korea, Taiwan, Hong-Kong, Macau and the Association of Southeast Asian Nations (collectively, the “Ono territory”), and the Company will be responsible for all such activities in the rest of the world outside the Ono territory, including the United States, Canada and European Union.

Under the terms of the Ono Agreement, the Company received non-refundable upfront payments of ¥900 million (\$8,142), consisting of an initial upfront fee payment of ¥110 million (\$995) and an initial upfront research service payment of ¥790 million (\$7,147). Additionally, in connection with the research activities to be conducted pursuant to the Ono Agreement, the Company is eligible to receive additional research service payments of up to an aggregate of ¥750 million (\$6,878) upon the occurrence of certain specified research triggers. The Company is also entitled to receive clinical, regulatory and commercial milestone payments of up to ¥17.21 billion (\$157,818) in the aggregate, plus a tiered percentage royalty on annual net sales in Ono’s Territory ranging from high-single digits to low teens, subject to certain specified reductions. All future milestone payments and royalties are payable in USD. Additionally, upon election by Ono to collaborate on the proposed product candidate, Ono shall be responsible for a specified percentage of research and development costs for the IND-enabling studies of the selected product candidate.

The Company assessed the arrangement in accordance with ASC 606 and concluded that Ono is a customer based on the arrangement structure. The Company identified a single performance obligation under the arrangement consisting of the combination of the license to develop and commercialize a selected product candidate targeting Polq and associated research services.

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

The Company determined that the license and research services are not distinct within the context of the contract, and the license is the predominant good or service. Accordingly, revenue is recognized in accordance with guidance for licenses, and because the license represents functional IP, it is recognized at the point in time control of the license is transferred.

The Company determined that the transaction price at the onset of the arrangement is the total upfront payments received in the aggregate amount of \$8,142 which is recorded as deferred revenue as of December 31, 2019. The future milestone payments represent variable consideration that is fully constrained at inception of the arrangement as the achievement of the milestone events are highly uncertain. The Company will reevaluate the likelihood of achievement of the milestones at the end of each reporting period and as uncertain events are resolved or other changes in circumstances occur, and, if necessary, adjust its estimate of the transaction price.

11. Share-Based Compensation

Option Plan

In December 2016, as further amended in December 2017 and September 2019, the Company adopted the Repare Therapeutics Inc. Option Plan (the "Option Plan") for the issuance of stock options and other share-based awards to directors, officers, employees or consultants. The Option Plan authorized up to 4,074,135 shares of the Company's common shares to be issued. At December 31, 2019, there were 569,016 shares available for future grant under the Option Plan.

The Option Plan is administered by the board of directors. The exercise prices, vesting and other restrictions are determined by the board of directors, except that the exercise price per share of stock option may not be less than 100% of the fair value of the common share on the date of grant. Stock options awarded under the Option Plan expire 10 years after the grant and generally have vesting conditions of 25% on the first anniversary of the date of grant and 75% on a monthly basis at a rate of 1/36th unless otherwise decided by the board of directors.

Stock Option Activity

The assumptions that the Company used in the Black Scholes option-pricing model to determine the grant date fair value of stock options granted to employees and non-employees were as follows, presented on a weighted-average basis:

	<u>Year Ended December 31,</u>		
	<u>2017</u>	<u>2018</u>	<u>2019</u>
Risk-free interest rate	2.21%	2.88%	1.94%
Expected term (in years)	6.08	6.08	6.10
Expected volatility	67.77%	67.32%	71.41%
Expected dividend yield	0.00%	0.00%	0.00%

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

The following table summarizes the Company's stock option activity:

	Number of Options	Weighted- Average Exercise Price	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding as of January 1, 2017	—	\$ —	—	\$ —
Granted	822,658	1.64	—	—
Exercised	—	—	—	—
Cancelled or forfeited	—	—	—	—
Outstanding as of December 31, 2017	<u>822,658</u>	\$ 1.64	9.47	\$ —
Granted	95,014	1.81	—	—
Exercised	—	—	—	—
Cancelled or forfeited	(10,357)	1.64	—	—
Outstanding as of December 31, 2018	<u>907,315</u>	\$ 1.66	8.55	\$ —
Granted	2,761,034	2.21	—	—
Exercised	—	—	—	—
Cancelled or forfeited	(163,230)	2.06	—	—
Outstanding as of December 31, 2019	<u>3,505,119</u>	\$ 2.07	8.98	\$ 1
Options exercisable as of December 31, 2018	305,413	\$ 1.64	8.47	\$ —
Options exercisable as of December 31, 2019	611,927	\$ 1.69	6.75	\$ —
Options unvested as of December 31, 2018	601,902	\$ 1.66	8.60	\$ —
Options unvested as of December 31, 2019	2,893,192	\$ 2.15	9.45	\$ 1

The aggregate intrinsic value of stock options is calculated as the difference between the exercise price of the stock options and the fair value of the Company's common shares for those stock options that had exercise prices lower than the fair value of the Company's common shares.

The weighted-average grant date fair value of the Company's stock options granted during the years ended December 31, 2017, 2018 and 2019 was \$1.03, \$1.33 and \$1.27, respectively.

The total fair value of options vested during the years ended December 31, 2017, 2018 and 2019 was \$0, \$314 and \$284, respectively.

Share-Based Compensation

Share-based compensation expense was allocated as follows:

	Year Ended December 31,		
	2017	2018	2019
Research and development	\$ 19	\$ 172	\$ 250
General and administrative	15	134	261
Total share-based compensation expense	<u>\$ 34</u>	<u>\$ 306</u>	<u>\$ 511</u>

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

As of December 31, 2017, 2018 and 2019, there was \$814, \$625 and \$3,557 of unrecognized share-based compensation expense related to unvested stock options, respectively. The unrecognized share-based compensation expense is expected to be recognized over a weighted-average remaining vesting period of 3.5, 2.6 and 3.2 years at December 31, 2017, 2018 and 2019, respectively.

12. Income Taxes

Loss before the provision for income taxes for the years ended December 31, 2017, 2018 and 2019 consisted of the following:

	Year Ended December 31,		
	2017	2018	2019
Canada	\$(7,208)	\$(14,416)	\$(27,355)
Foreign	(588)	168	\$ 334
	<u>\$(7,796)</u>	<u>\$(14,248)</u>	<u>\$(27,021)</u>

A reconciliation between tax expense and the product of accounting income multiplied by the statutory income tax rate for years ended December 31, 2017, 2018 and 2019 is as follows:

	Year Ended December 31,		
	2017	2018	2019
Loss before income taxes	\$(7,796)	\$(14,248)	\$(27,021)
Income tax at statutory rate	26.5%	26.5%	26.5%
Computed income tax recovery	(2,066)	(3,776)	(7,160)
Effect on income tax resulting from:			
Federal investment tax credit	(353)	(572)	(985)
Accounting charges not deductible for tax purposes	(45)	760	277
Other	(61)	108	(16)
Change in valuation allowance	2,525	3,515	8,079
Total provision for income taxes	<u>\$ —</u>	<u>\$ 35</u>	<u>\$ 195</u>

As of December 31, 2019, the Company had tax losses of approximately \$31,481, which are available to offset future taxable income in Canada. The Company has not recognized the tax benefit of these losses. These losses expire as follows:

2039	\$ 19,550
2038	6,460
2037	5,125
2036	346
Total	<u>\$ 31,481</u>

As of December 31, 2019, the Company had Scientific Research and Experimental Development (“SR&ED”) expenditures of approximately \$15,829, respectively, for Canadian federal and Quebec purposes, which have not been deducted. These expenditures are available to reduce future taxable income and have an unlimited

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

carryforward period. SR&ED expenditures are subject to verification by the tax authorities and, accordingly, the amounts may vary.

As of December 31, 2019, the Company had non-refundable Canadian federal investment tax credits of approximately \$2,553, which may be utilized to reduce Canadian federal income taxes payable. The Company has not recognized the tax benefits related to the non-refundable investment tax credits. The investment tax credits expire as follows:

2039	1,369
2038	776
2037	384
2036	24
Total	<u>2,553</u>

The Company's deferred tax assets for the years ended December 31, 2018 and 2019 consisted of the following:

	<u>2018</u>	<u>2019</u>
Net operating loss carryforwards	\$ 3,010	\$ 8,442
Net research and development expenditures	1,830	4,195
Share issuance costs	9	78
Net federal investment tax credits	829	1,877
Tax basis of property and equipment in excess of carrying values	132	(204)
Operating lease right-of-use assets	—	(279)
Operating lease liability	—	287
Accrued expense and other liabilities	—	161
Total deferred tax assets	<u>5,810</u>	<u>14,557</u>
Valuation allowance	<u>(5,810)</u>	<u>(14,425)</u>
Net deferred tax assets	<u>\$ —</u>	<u>\$ 132</u>

The Company files income tax returns in Canada and in the United States. In the normal course of business, the Company could be subject to examination by federal and provincial or state jurisdictions, where applicable. There are currently no pending tax examinations. The Company may be subject to tax examination for 2016, 2017, 2018 and 2019 due to unexpired statute of limitation periods.

The calculation of the Company's tax liabilities involves dealing with uncertainties in the application of complex tax laws and regulations for both federal taxes and the provinces and states in which the Company operates or does business in. ASC 740 states that a tax benefit from an uncertain tax position may be recognized when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, on the basis of the technical merits.

The Company records uncertain tax positions as liabilities in accordance with ASC 740 and adjusts these liabilities when the Company's judgment changes as a result of the evaluation of new information not previously available. Because of the complexity of some of these uncertainties, the ultimate resolution may result in a payment that is materially different from the current estimate of the unrecognized tax benefit liabilities. These differences will be reflected as increases or decreases to income tax expense in the period in which new

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

information is available. As of December 31, 2018 and 2019, no uncertain tax positions have been recorded in the consolidated financial statements.

The Company recognizes interest and penalties related to unrecognized tax benefits on the income tax expense line in the accompanying consolidated statement of operations and comprehensive loss. As of December 31, 2018 and 2019, no accrued interest or penalties are included on the related tax liability line in the consolidated balance sheet.

13. Net Loss per Share and Unaudited Pro Forma Net Loss per Share

The following table summarizes the computation of basic and diluted net loss per share attributable to common shareholders of the Company:

	Year Ended December 31,		
	2017	2018	2019
Numerator:			
Net loss attributable to common shareholders	\$ (7,796)	\$ (14,283)	\$ (27,216)
Net loss attributable to common shareholders—basic and diluted	<u>\$ (7,796)</u>	<u>\$ (14,283)</u>	<u>\$ (27,216)</u>
Denominator:			
Weighted-average number of common shares outstanding—basic and diluted	<u>1,522,544</u>	<u>1,528,374</u>	<u>1,528,374</u>
Net loss per share attributable to common shareholders—basic and diluted	<u>\$ (5.12)</u>	<u>\$ (9.35)</u>	<u>\$ (17.81)</u>

The Company's potentially dilutive securities, which include Convertible Preferred Shares and stock options, have been excluded from the computation of diluted net loss per share attributable to common shareholders as the effect would be to reduce the net loss per share attributable to common shareholders. Therefore, the weighted average number of common shares outstanding used to calculate both basic and diluted net loss per share attributable to common shareholders is the same. The Company excluded the following potential common shares, presented based on amounts outstanding at each period end, from the computation of diluted net loss per share attributable to common shareholders for the periods indicated because including them would have had an anti-dilutive effect:

	Year Ended December 31,		
	2017	2018	2019
Series A preferred shares	6,813,340	6,813,340	11,090,135
Series B preferred shares	—	—	10,468,258
Options to purchase common shares	822,658	907,315	3,505,119

Unaudited pro forma net loss per share attributable to common shareholders is computed using the weighted-average number of common shares outstanding after giving effect to the conversion of all outstanding convertible preferred shares into common shares as if such conversion had occurred on January 1, 2019, or the date of issuance, if later.

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

Unaudited pro forma basic and diluted net loss per share attributable to common shareholders was calculated as follows:

	<u>Year Ended December 31, 2019</u>
Numerator:	
Net loss attributable to common shareholders	\$ (27,216)
Reversal of the change in fair value of the Series A Tranche Obligation due to the assumed conversion of convertible preferred shares to common shares upon the completion of the proposed initial public offering	1,350
Net loss attributable to common shareholders—basic and diluted	<u>\$ (25,866)</u>
Denominator:	
Weighted-average number of common shares outstanding—basic and diluted	1,528,374
Pro forma adjustment to reflect assumed conversion of convertible preferred shares to common shares upon the completion of the proposed initial public offering	14,262,257
Pro forma weighted-average common shares outstanding—basic and diluted	<u>15,790,631</u>
Pro forma net loss per share attributable to common shareholders—basic and diluted	<u>\$ (1.64)</u>

14. Government Assistance

The Company incurred research and development expenditures which are eligible for investment tax credits. The investment tax credits recorded are based on management's estimates of amounts expected to be recovered and are subject to audit by the taxation authorities. These amounts have been recorded as a reduction of research and development expenditures for an amount of \$162, \$330 and \$566 for the years ended December 31, 2017, 2018 and 2019, respectively.

15. Commitments and Contingencies

On February 25, 2019, the Company entered into an agreement with The Broad Institute, Inc. ("Broad"). Broad will perform specialty screening services at the Company's request over the course of a three-year term. In exchange for the specialty screening services, the Company will pay Broad \$500 per year, beginning on February 25, 2019, for a total of \$1,500.

The contractual commitments for the Broad and other agreements as of December 31, 2019 are as follows:

<u>Year Ending December 31,</u>	
2020	\$ 525
2021	525
2022	25
2023	25
2024	25
Total	<u>\$1,125</u>

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

16. Currency Risk

The Company is exposed to the financial risk related to the fluctuation of foreign exchange rates and the degree of volatility of those rates. The foreign currency risk is limited to the portion of the Company's business transactions denominated in currency other than USD.

The Company incurs a portion of its expenses in Canadian dollars, as well as other currencies to a lesser extent. A change in the currency exchange rates between the USD relative to the Canadian dollar could have a significant effect on the Company's results of operations, financial position or cash flows. The Company does not enter into arrangements to hedge its currency risk exposure, although it maintains expected Canadian dollar cash requirements in Canadian dollars to form a natural hedge.

The Company is exposed to currency risk through its cash, research and development tax credits receivable, other receivables, accounts payable and accrued expenses and other current liabilities denominated in thousands of Canadian dollars as follows:

	December 31,	
	2018	2019
Cash	\$6,142	\$29,983
Restricted cash	270	270
Research and development tax credits receivable	651	1,403
Other receivables	800	2,566
Accounts payable	(819)	(1,026)
Accrued expenses and other current liabilities	(183)	(283)
Net financial position exposure	<u>\$6,861</u>	<u>\$32,913</u>

Based on the above net exposure at December 31, 2019, and assuming that all other variables remain constant, a 10% depreciation of the USD against the Canadian dollar would result in an increase of \$2,304 in the Company's net loss for the year ended December 31, 2019.

The Company is also exposed to currency risk through the Ono Agreement as future payments receivable under its collaboration with Ono, if any, are denominated in Japanese yen.

17. Related Parties

Details of transactions between the Company and other related parties are disclosed below and in other notes according to the nature of the transactions. All transactions are measured at the exchange amount, which is the amount of consideration determined and agreed to by the related parties.

For the years ended December 31, 2017, 2018 and 2019, the Company recorded expenses of \$0, \$322 and \$1,271, respectively, for research services and rent paid by the Company to entities affiliated with a shareholder. As of December 31, 2017, 2018 and 2019, there was a total of \$0, \$122 and \$170, respectively, in accounts payable and accrued expenses and other current liabilities owed to an entity affiliated with a shareholder.

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

18. Geographic Information

The Company's property and equipment, net by location as of December 31, 2018 and 2019 was as follows:

	December 31, 2018	December 31, 2019
Canada	\$ 1,651	\$ 2,279
United States	1	111
Total property and equipment, net	<u>\$ 1,652</u>	<u>\$ 2,390</u>

The Company's right-of-use assets by location were as follows:

	December 31, 2019
Canada	\$ 409
United States	625
Total right-of-use assets, net	<u>\$ 1,034</u>

19. Subsequent Events

Subsequent events have been evaluated through the date of filing of this prospectus. The Company has concluded that no subsequent events have occurred that require disclosure, except as disclosed within these consolidated financial statements and as described below.

a) Subsequent events through April 3, 2020:

In the first quarter of 2020, an aggregate of 181,318 options were exercised at a weighted average exercise price of \$1.79 per share, for aggregate proceeds of \$324.

On April 2, 2020, the board of directors of the Company authorized the issuance of an aggregate of 51,139 stock options to employees, at an exercise price of \$5.15 per share.

In March 2020, the Company executed a strategic collaboration with The University of Texas M. D. Anderson Cancer Center ("MDACC"), a comprehensive cancer research, treatment and prevention center. The collaboration will consist of preclinical and clinical studies designed by the Company and MDACC with the research completed by MDACC. The Company has agreed to commit a total of \$10,000 in funding for the performance of the study over a period of five years.

b) Subsequent events through June 15, 2020:

Reverse Stock Split

On June 10, 2020, the Company's shareholders and board of directors approved an amendment to the Company's articles of amendment to effect a 1-for-6.062 reverse stock split of the Company's common shares, Series A Preferred Shares and Series B Preferred Shares. The Company's outstanding stock options were also adjusted to reflect the 1-for-6.062 reverse stock split of the Company's common shares. Accordingly, all common shares, Series A Preferred Shares, Series B Preferred Shares, stock options and per share amounts in these consolidated financial statements have been retroactively adjusted for all periods presented to give effect to the reverse stock split. Outstanding stock options were proportionately reduced and the respective exercise prices, if applicable, were proportionately increased. The reverse stock split was effected on June 12, 2020.

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

Stock Options

The Company's 2020 Equity Incentive Plan (the "2020 Plan") was approved by the Company's shareholders and board of directors on June 10, 2020, and will become effective upon the effectiveness of this prospectus. The 2020 Plan will replace the Option Plan as the board of directors determined not to make additional awards under the Option Plan following the effectiveness of this prospectus. The 2020 Plan allows the Company's compensation committee to make equity-based and cash-based incentive awards to our officers, employees, directors and other key persons (including consultants). The Company initially reserved up to 3,600,000 new common shares for issuance under the 2020 Plan, plus the number of shares (not to exceed 3,807,448 shares) (i) that remain available for the issuance of awards under the Option Plan at the time the 2020 Plan becomes effective, and (ii) any shares subject to outstanding options or other share awards that were granted under the Option Plan that terminate or expire prior to exercise or settlement; are forfeited because of the failure to vest; or are reacquired or withheld (or not issued) to satisfy a tax withholding obligation or the purchase or exercise price. The 2020 Plan provides that the number of shares reserved and available for issuance under the plan will automatically increase each January 1, beginning on January 1, 2021 and each January 1 thereafter through January 31, 2030, by 5% of the outstanding number of common shares on the immediately preceding December 31, or such lesser number of shares as determined by our board of directors.

In May 2020, the board of directors of the Company authorized the issuance of an aggregate of 227,234 stock options to employees at a weighted average exercise price of \$9.38.

In May and June 2020, an aggregate of 85,369 options were exercised at a weighted average exercise price of \$1.92 per share, for aggregate proceeds of \$164.

Contingent and effective upon the execution of the underwriting agreement for the Company's initial public offering, in June 2020 the board of directors of the Company authorized the issuance of an aggregate of 590,702 stock options to employees, at an exercise price equal to the initial public offering price per share.

2020 Employee Share Purchase Plan

The 2020 Employee Share Purchase Plan (the "ESPP") was approved by the Company's shareholders and board of directors on June 10, 2020, and will become effective upon the effectiveness of this prospectus. The ESPP initially reserved and authorized the issuance of up to 327,000 common shares to participating employees. The ESPP provides that the number of shares reserved and available for issuance will automatically increase each January 1, beginning on January 1, 2021 and each January 1 thereafter through January 31, 2030, by the lesser of 1.0% of the total number of common shares outstanding on December 31 of the preceding calendar year, 3,300,000 common shares, or such smaller number of common shares as the board of directors may designate.

Collaboration and License Agreement

In May 2020, the Company entered into a collaboration and license agreement with Bristol-Myers Squibb Company, or Bristol Myers Squibb, pursuant to which the Company and Bristol Myers Squibb have agreed to collaborate in the research and development of potential new product candidates for the treatment of cancer. Bristol Myers Squibb paid the Company an initial upfront fee payment of \$50,000 in June 2020. The Company is entitled to receive up to \$301,000 in total milestones on a program-by-program basis, consisting of \$176,000 in the aggregate for certain specified research, development and regulatory milestones and \$125,000 in the aggregate for certain specified commercial milestones. The Company is also entitled to a tiered percentage royalty on annual net sales ranging from high-single digits to low-double digits, subject to certain specified reductions. In conjunction with the collaboration and license agreement,

REPARE THERAPEUTICS INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless otherwise specified)

the Company entered into a warrant agreement with an affiliate of Bristol Myers Squibb pursuant to which the Company issued a warrant for total proceeds of \$15,000. This warrant will automatically convert into common shares at the subscription price of \$15,000 divided by the initial public offering price of the Company's common shares in an initial public offering; provided that, in the event that the initial public offering is not consummated by December 31, 2020, the warrant will be automatically exercised for a specified number of preferred shares.

Repare Therapeutics Inc.
Condensed Consolidated Balance Sheets
(Unaudited)
(In thousands of U.S. dollars, except share data)

	<u>As of</u> <u>December 31,</u> <u>2019</u>	<u>As of</u> <u>March 31,</u> <u>2020</u>
ASSETS		
CURRENT ASSETS:		
Cash	\$ 94,797	\$ 83,711
Research and development tax credits receivable	1,080	1,188
Other receivables	1,976	2,211
Prepaid expenses and other current assets	719	775
Total current assets	<u>98,572</u>	<u>87,885</u>
Property and equipment, net	2,390	2,231
Restricted cash	208	192
Operating lease right-of-use assets	1,034	879
Other assets	359	2,250
Deferred tax assets	132	132
TOTAL ASSETS	<u>\$ 102,695</u>	<u>\$ 93,569</u>
LIABILITIES, CONVERTIBLE PREFERRED SHARES AND SHAREHOLDERS' DEFICIT		
CURRENT LIABILITIES:		
Accounts payable	\$ 2,127	\$ 3,294
Accrued expenses and other current liabilities	1,276	3,116
Operating lease liability, current portion	625	626
Income tax payable	218	271
Total current liabilities	<u>4,246</u>	<u>7,307</u>
Operating lease liability, net of current portion	439	258
Deferred revenue	8,142	8,142
TOTAL LIABILITIES	<u>\$ 12,827</u>	<u>\$ 15,707</u>
Series A convertible Preferred Shares, no par value per share; unlimited shares authorized; 11,090,135 shares issued and outstanding as of December 31, 2019 and March 31, 2020; liquidation value of \$52,750 as of December 31, 2019 and March 31, 2020	53,749	53,749
Series B convertible Preferred Shares, no par value per share; unlimited shares authorized; 10,468,258 shares issued and outstanding as of December 31, 2019 and March 31, 2020; liquidation and redemption value of \$82,496 as of December 31, 2019 and March 31, 2020	82,248	82,248
TOTAL CONVERTIBLE PREFERRED SHARES	<u>135,997</u>	<u>135,997</u>
SHAREHOLDERS' DEFICIT		
Common shares, no par value per share; unlimited shares authorized as of December 31, 2019 and March 31, 2020; 1,528,374 and 1,709,692 shares issued and outstanding as of December 31, 2019, and March 31, 2020, respectively	1	521
Additional paid-in capital	3,811	3,886
Accumulated deficit	(49,941)	(62,542)
Total shareholders' deficit	<u>(46,129)</u>	<u>(58,135)</u>
TOTAL LIABILITIES, CONVERTIBLE PREFERRED SHARES AND SHAREHOLDERS' DEFICIT	<u>\$ 102,695</u>	<u>\$ 93,569</u>

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements

Repare Therapeutics Inc.
Condensed Consolidated Statements of Operations and Comprehensive Loss
(Unaudited)
(In thousands of U.S. dollars, except share and per share data)

	Three Months Ended	
	March 31,	
	2019	2020
Operating expenses:		
Research and development, net of tax credits	\$ 3,703	\$ 8,632
General and administrative	1,076	2,183
Total operating expenses	4,779	10,815
Loss from operations	(4,779)	(10,815)
Other income (expense), net		
Realized and unrealized gain (loss) on foreign exchange	72	(1,731)
Change in fair value of Series A Preferred Share tranche obligation	(20)	—
Other expense	(2)	(2)
Total other income (expense), net	50	(1,733)
Loss before income taxes	(4,729)	(12,548)
Income tax expense	(109)	(53)
Net loss and comprehensive loss	\$ (4,838)	\$ (12,601)
Net loss attributable to common shareholders—basic and diluted	\$ (4,838)	\$ (12,601)
Net loss per share attributable to common shareholders—basic and diluted	\$ (3.17)	\$ (7.71)
Weighted-average common shares outstanding—basic and diluted	1,528,374	1,634,056
Pro forma net loss per share attributable to common shareholders—basic and diluted		\$ (0.54)
Pro forma weighted-average common shares outstanding—basic and diluted		23,192,449

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements

Repare Therapeutics Inc.
Condensed Consolidated Statements of Convertible Preferred Shares and Shareholders' Deficit
Three months ended March 31, 2019 and 2020
(Unaudited)
(In thousands of U.S. dollars, except share data)

	Convertible Preferred Shares				Common Shares		Additional Paid-in Capital	Accumulated Deficit	Total Shareholders' Deficit
	Series A		Series B		Shares	Amount			
	Shares	Amount	Shares	Amount	Shares	Amount			
Balance, January 1, 2019	6,813,340	\$31,873	—	\$ —	1,528,374	\$ 1	\$ 340	\$ (22,725)	\$ (22,384)
Issuance of Series A convertible Preferred Shares, net of issuance costs of \$5	4,276,795	21,876	—	—	—	—	—	—	—
Share-based compensation expense	—	—	—	—	—	—	65	—	65
Net loss and comprehensive loss	—	—	—	—	—	—	—	(4,838)	(4,838)
Balance, March 31, 2019	<u>11,090,135</u>	<u>\$53,749</u>	<u>—</u>	<u>\$ —</u>	<u>1,528,374</u>	<u>\$ 1</u>	<u>\$ 405</u>	<u>\$ (27,563)</u>	<u>\$ (27,157)</u>
Balance, December 31, 2019	11,090,135	\$53,749	10,468,258	\$82,248	1,528,374	\$ 1	\$ 3,811	\$ (49,941)	\$ (46,129)
Exercise of stock options	—	—	—	—	181,318	520	(196)	—	324
Share-based compensation expense	—	—	—	—	—	—	271	—	271
Net loss and comprehensive loss	—	—	—	—	—	—	—	(12,601)	(12,601)
Balance, March 31, 2020	<u>11,090,135</u>	<u>\$53,749</u>	<u>10,468,258</u>	<u>\$82,248</u>	<u>1,709,692</u>	<u>\$ 521</u>	<u>\$ 3,886</u>	<u>\$ (62,542)</u>	<u>\$ (58,135)</u>

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements

Repare Therapeutics Inc.
Condensed Consolidated Statements of Cash Flows
(Unaudited)
(In thousands of U.S. dollars)

	Three Months Ended	
	March 31,	
	2019	2020
Cash Flows From Operating Activities:		
Net loss and comprehensive loss for the period	\$ (4,838)	\$(12,601)
Adjustments to reconcile net loss to net cash used in operating activities:		
Share-based compensation expense	65	271
Depreciation expense	122	196
Change in fair value of the Series A Preferred Shares tranche obligation	20	—
Non-cash lease expense	31	155
Foreign exchange loss	32	1,772
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	81	(56)
Research and development tax credits receivable	(119)	(191)
Other receivables	(280)	(400)
Other non-current assets	—	(713)
Accounts payable	26	1,187
Accrued expenses and other current liabilities	(416)	758
Operating lease liability, current portion	6	16
Income tax payable	11	53
Operating lease liability, net of current portion	(33)	(164)
Deferred revenue	8,142	—
Net cash provided by (used in) operating activities	<u>2,850</u>	<u>(9,717)</u>
Cash Flows From Investing Activities:		
Purchase of property and equipment	(80)	(30)
Net cash used in investing activities	<u>(80)</u>	<u>(30)</u>
Cash Flows From Financing Activities:		
Proceeds from issuance of Series A Preferred Shares, net	20,995	—
Proceeds from exercise of stock options	—	324
Payment of deferred offering costs	—	(102)
Net cash provided by financing activities	<u>20,995</u>	<u>222</u>
Effect of exchange rate fluctuations on cash held	(44)	(1,577)
Net Increase (Decrease) In Cash And Restricted Cash	23,721	(11,102)
Cash and restricted cash at beginning of period	10,929	95,005
Cash and restricted cash at end of period	<u>\$34,650</u>	<u>\$ 83,903</u>
Reconciliation Of Cash And Restricted Cash		
Cash	\$34,448	\$ 83,711
Restricted cash	202	192
Total cash and restricted cash	<u>\$34,650</u>	<u>\$ 83,903</u>
Supplemental Disclosure Of Cash Flow Information:		
Property and equipment purchases in accounts payable	\$ 159	\$ 7
Deferred offering costs in accrued expenses	<u>\$ —</u>	<u>\$ 1,084</u>

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements

REPARE THERAPEUTICS INC.
NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless other specified)

1. Organization and Nature of Business

Repare Therapeutics Inc. (“Repare” or the “Company”) is a precision medicine oncology company focused on the development of synthetic lethality-based therapies to patients with cancer. The Company was incorporated under the *Canada Business Corporations Act* on September 6, 2016.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying unaudited, condensed consolidated financial statements have been prepared in conformity with generally accepted accounting principles in the United States of America (“U.S. GAAP”). Any reference in these notes to applicable guidance is meant to refer to the authoritative U.S. GAAP as found in the Accounting Standards Codification (“ASC”) and as amended by Accounting Standards Updates (“ASU”) of the Financial Accounting Standards Board (“FASB”).

The unaudited condensed consolidated interim financial statements have been prepared on the same basis as the audited annual consolidated financial statements as of and for the year ended December 31, 2019, and, in the opinion of management, reflect all adjustments, consisting of normal recurring adjustments, necessary for the fair presentation of the Company’s consolidated financial position as of March 31, 2020, and the consolidated results of its operations and its consolidated cash flows for the three months ended March 31, 2020 and 2019.

The accompanying condensed consolidated financial statements should be read in conjunction with the Company’s audited consolidated financial statements and the accompanying notes for the year ended December 31, 2019, which are included elsewhere in this prospectus. The condensed consolidated balance sheet data as of December 31, 2019 presented for comparative purposes was derived from the Company’s audited consolidated financial statements but does not include all disclosures required by U.S. GAAP. The results for the three months ended March 31, 2020 are not necessarily indicative of the operating results to be expected for the full year or for any other subsequent interim period.

The Company’s significant accounting policies are disclosed in the audited consolidated financial statements for the year ended December 31, 2019, included elsewhere in this prospectus. Since the date of those financial statements, there have been no changes to its significant accounting policies except as noted below.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in consolidated financial statements and accompanying notes. Significant estimates and assumptions reflected in these consolidated financial statements include, but are not limited to, accrued research and development expenses and share-based compensation. Estimates are periodically reviewed in light of changes in circumstances, facts and experience. Changes in estimates are recorded in the period in which they become known. Actual results could differ from those estimates.

COVID-19 Pandemic

With the global spread of the ongoing COVID-19 pandemic in the first quarter of 2020, the Company has established a cross-functional task force and has implemented business continuity plans designed to address and mitigate the impact of the COVID-19 pandemic on its employees and its business, including its preclinical

REPARE THERAPEUTICS INC.
NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless other specified)

studies and its planned clinical trials. The Company's operations are considered as an essential business and the Company is continuing to operate during this period. The Company has taken measures to secure its research and development activities, while work in its laboratories and facilities has been organized to reduce risk of COVID-19 transmission. While the Company is experiencing limited financial impacts at this time, given the global economic slowdown, the overall disruption of global healthcare systems and the other risks and uncertainties associated with the pandemic, the Company's business, consolidated financial condition and results of operations could be materially adversely affected. The Company continues to closely monitor the COVID-19 pandemic as it evolves its business continuity plans, clinical development plans and response strategy.

Deferred Offering Costs

The Company capitalizes certain legal, professional accounting and other third-party fees that are directly associated with in-process equity financings as deferred offering costs until such financings are consummated. After consummation of the equity financing, these costs are recorded in shareholders' deficit as a reduction of proceeds generated as a result of the offering. Deferred offering costs of \$1,186 are capitalized and classified with other assets on the condensed consolidated balance sheet as of March 31, 2020. There were no deferred offering costs as of December 31, 2019.

3. Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities as of December 31, 2019 and March 31, 2020 consisted of the following:

	December 31, 2019	March 31, 2020
Accrued compensation and benefits	\$ 1,043	\$ 754
Accrued research and development expense	208	897
Accrued offering costs	—	1,084
Accrued professional services	21	381
Other	4	—
Total accrued expenses and other current liabilities	<u>\$ 1,276</u>	<u>\$ 3,116</u>

4. Significant Agreements

In March 2020, the Company executed a strategic collaboration with The University of Texas M. D. Anderson Cancer Center ("MDACC"). The collaboration will consist of preclinical and clinical studies designed by the Company and MDACC with the research conducted by MDACC. The Company has agreed to commit \$10,000 in funding for various studies over a period of five years, of which \$2,000 was paid in April 2020.

5. Leases

The Company has historically entered into lease arrangements for its facilities. As of March 31, 2020, the Company had three operating leases with required future minimum payments. The Company's leases generally do not include termination or purchase options.

REPARE THERAPEUTICS INC.
NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless other specified)

Operating Leases

The following table contains a summary of the lease costs recognized under ASC 842 and other information pertaining to the Company's operating leases for the three months ended March 31, 2020:

	March 31, 2020
Operating Leases	
Lease Cost	
Operating lease cost	\$ 165
Short-term lease cost	3
Variable lease cost	53
Total lease cost	<u>\$ 221</u>
	March 31, 2020
Other Operating Lease Information	
Operating cash flows for operating leases	\$167
Weighted-average remaining lease term	1.55 years
Weighted-average discount rate	7.6%

6. Share-Based Compensation**Option Plan**

In December 2016, as further amended in December 2017 and September 2019, the Company adopted the Repare Therapeutics Inc. Option Plan (the "Option Plan") for the issuance of share options and other share-based awards to directors, officers, employees or consultants. The Option Plan authorized up to 4,074,135 shares of the Company's common shares to be issued. At March 31, 2020, there were 569,016 shares available for future grant under the Option Plan.

Share-Based Compensation

Share-based compensation expense was allocated as follows:

	Three Months Ended March 31,	
	2019	2020
Research and development	\$ 40	\$ 133
General and administrative	25	138
Total share-based compensation expense	<u>\$ 65</u>	<u>\$ 271</u>

During the three months ended March 31, 2020, the Company did not grant options to purchase common shares. During the three months ended March 31, 2019 and 2020, the Company recorded share-based compensation expense for options granted of \$65 and \$271, respectively.

During the three months ended March 31, 2020, an aggregate of 181,318 options were exercised at a weighted-average exercise price of \$1.79 per share, for aggregate proceeds of \$324. As a result, an amount of \$196 previously included in additional paid-in capital related to the exercised options has been credited to common shares and deducted from additional paid-in capital.

REPARE THERAPEUTICS INC.
NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless other specified)

As of March 31, 2020, there were 3,323,801 options outstanding. As of March 31, 2020, there was \$3,286 of unrecognized share-based compensation expense related to unvested stock options to be recognized over a period of 3.0 years.

7. Net Loss per Share and Unaudited Pro Forma Net Loss per Share

The following table summarizes the computation of basic and diluted net loss per share attributable to common shareholders of the Company:

	Three Months Ended March 31,	
	2019	2020
<i>(in thousands, except share and per share amounts)</i>		
Numerator:		
Net loss attributable to common shareholders	\$ (4,838)	\$ (12,601)
Net loss attributable to common shareholders—basic and diluted	<u>\$ (4,838)</u>	<u>\$ (12,601)</u>
Denominator:		
Weighted-average number of common shares outstanding—basic and diluted	<u>1,528,374</u>	<u>1,634,056</u>
Net loss per share attributable to common shareholders—basic and diluted	<u>\$ (3.17)</u>	<u>\$ (7.71)</u>

The Company's potentially dilutive securities, which include convertible preferred shares and options, have been excluded from the computation of diluted net loss per share attributable to common shareholders as the effect would be to reduce the net loss per share attributable to common shareholders. Therefore, the weighted average number of common shares outstanding used to calculate both basic and diluted net loss per share attributable to common shareholders is the same. The Company excluded the following potential common shares, presented based on amounts outstanding at each period end, from the computation of diluted net loss per share attributable to common shareholders for the periods indicated because including them would have had an anti-dilutive effect:

	Three Months Ended	
	March 31,	
	2019	2020
Series A preferred shares	11,090,135	11,090,135
Series B preferred shares	—	10,468,258
Options to purchase common shares	1,920,950	3,323,801

Unaudited pro forma net loss per share attributable to common shareholders is computed using the weighted-average number of common shares outstanding after giving effect to the conversion of all outstanding convertible preferred shares into common shares as if such conversion had occurred on January 1, 2020, or the date of issuance, if later.

REPARE THERAPEUTICS INC.
NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless other specified)

Unaudited pro forma basic and diluted net loss per share attributable to common shareholders was calculated as follows:

	Three Months Ended March 31, 2020
	<i>(in thousands, except share and per share amounts)</i>
Numerator:	
Net loss attributable to common shareholders	\$ (12,601)
Net loss attributable to common shareholders—basic and diluted	<u>\$ (12,601)</u>
Denominator:	
Weighted-average number of common shares outstanding—basic and diluted	1,634,056
Pro forma adjustment to reflect assumed conversion of convertible preferred shares to common shares upon the completion of the proposed initial public offering	21,558,393
Pro forma weighted-average common shares outstanding—basic and diluted	<u>23,192,449</u>
Pro forma net loss per share attributable to common shareholders—basic and diluted	<u>\$ (0.54)</u>

8. Subsequent Events

Subsequent events have been evaluated through the date of filing of this prospectus. The Company has concluded that no subsequent events have occurred that require disclosure, except as described below.

Reverse Stock Split

On June 10, 2020, the Company's shareholders and board of directors approved an amendment to the Company's articles of amendment to effect a 1-for-6.062 reverse stock split of the Company's common shares, Series A Preferred Shares and Series B Preferred Shares. The Company's outstanding stock options were also adjusted to reflect the 1-for-6.062 reverse stock split of the Company's common shares. Accordingly, all common shares, Series A Preferred Shares, Series B Preferred Shares, stock options and per share amounts in these consolidated financial statements have been retroactively adjusted for all periods presented to give effect to the reverse stock split. Outstanding stock options were proportionately reduced and the respective exercise prices, if applicable, were proportionately increased. The reverse stock split was effected on June 12, 2020.

Stock Options

The Company's 2020 Equity Incentive Plan (the "2020 Plan") was approved by the Company's shareholders and board of directors on June 10, 2020, and will become effective upon the effectiveness of this prospectus. The 2020 Plan will replace the Option Plan as the board of directors determined not to make additional awards under the Option Plan following the effectiveness of this prospectus. The 2020 Plan allows the Company's compensation committee to make equity-based and cash-based incentive awards to our officers, employees, directors and other key persons (including consultants). The Company initially reserved up to 3,600,000 new common shares for issuance under the 2020 Plan, plus the number of shares (not to exceed 3,807,448 shares) (i) that remain available for the issuance of awards under the Option Plan at the time the 2020 Plan becomes effective, and (ii) any shares subject to outstanding options or other share awards that were granted under the Option Plan that terminate or expire prior to exercise or settlement; are forfeited because of the failure to vest; or

REPARE THERAPEUTICS INC.
NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of U.S. dollars, except share and per share amounts, unless other specified)

are reacquired or withheld (or not issued) to satisfy a tax withholding obligation or the purchase or exercise price. The 2020 Plan provides that the number of shares reserved and available for issuance under the plan will automatically increase each January 1, beginning on January 1, 2021 and each January 1 thereafter through January 31, 2030, by 5% of the outstanding number of common shares on the immediately preceding December 31, or such lesser number of shares as determined by our board of directors.

In April and May 2020, the board of directors of the Company authorized the issuance of an aggregate of 278,373 stock options to employees, at a weighted average exercise price of \$8.60 per share.

In May and June 2020, an aggregate of 85,369 options were exercised at a weighted average price of \$1.92 per share, for aggregate proceeds of \$164.

Contingent and effective upon the execution of the underwriting agreement for the Company's initial public offering, in June 2020 the board of directors of the Company authorized the issuance of an aggregate of 590,702 stock options to employees, at an exercise price equal to the initial public offering price per share.

2020 Employee Share Purchase Plan

The 2020 Employee Share Purchase Plan (the "ESPP") was approved by the Company's shareholders and board of directors on June 10, 2020, and will become effective upon the effectiveness of this prospectus. The ESPP initially reserved and authorized the issuance of up to 327,000 common shares to participating employees. The ESPP provides that the number of shares reserved and available for issuance will automatically increase each January 1, beginning on January 1, 2021 and each January 1 thereafter through January 31, 2030, by the lesser of 1.0% of the total number of common shares outstanding on December 31 of the preceding calendar year, 3,300,000 common shares, or such smaller number of common shares as the board of directors may designate.

Collaboration and License Agreement

In May 2020, the Company entered into a collaboration and license agreement with Bristol-Myers Squibb Company, or Bristol Myers Squibb, pursuant to which the Company and Bristol Myers Squibb have agreed to collaborate in the research and development of potential new product candidates for the treatment of cancer. Bristol Myers Squibb paid the Company an initial upfront fee payment of \$50,000 in June 2020. The Company is entitled to receive up to \$301,000 in total milestones on a program-by-program basis, consisting of \$176,000 in the aggregate for certain specified research, development and regulatory milestones and \$125,000 in the aggregate for certain specified commercial milestones. The Company is also entitled to a tiered percentage royalty on annual net sales ranging from high-single digits to low-double digits, subject to certain specified reductions. In conjunction with the collaboration and license agreement, the Company entered into a warrant agreement with an affiliate of Bristol Myers Squibb pursuant to which the Company issued a warrant for total proceeds of \$15,000. This warrant will automatically convert into common shares at the subscription price of \$15,000 divided by the initial public offering price of the Company's common shares in an initial public offering; provided that, in the event that the initial public offering is not consummated by December 31, 2020, the warrant will be automatically exercised for a specified number of preferred shares.

10,000,000 Shares



Common Shares

PRELIMINARY PROSPECTUS

Joint Book-Running Managers

Morgan Stanley

Goldman Sachs & Co. LLC

Cowen

Piper Sandler

, 2020

Through and including , 2020 (the 25th day after the commencement of this offering), all dealers that buy, sell or trade common shares, whether or not participating in this offering, may be required to deliver a prospectus. This delivery requirement is in addition to the dealers' obligation to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution.

The following table sets forth the costs and expenses, other than the underwriting commissions, payable by the registrant in connection with the sale of our common shares being registered. All amounts are estimates except for the Securities and Exchange Commission, or SEC, registration fee, the Financial Industry Regulatory Authority, or FINRA, filing fee and the Nasdaq Global Select Market, or Nasdaq, listing fee.

<u>ITEM</u>	<u>AMOUNT</u>
SEC registration fee	\$ 29,854
FINRA filing fee	35,000
Nasdaq listing fee	170,000
Printing expenses	300,000
Legal fees and expenses	2,400,000
Accounting fees and expenses	265,000
Transfer agent fees and expenses	7,500
Miscellaneous expenses	792,646
Total	<u>\$ 4,000,000</u>

Item 14. Indemnification of Directors and Officers.

Under the QBCA and our amended and restated bylaws to be in effect upon the completion of this offering, we must indemnify our current or former directors and officers, agents or any other individuals who act or has acted at our request as a director or officer of another group, against all costs, charges and expenses reasonably incurred in the exercise of such individual's functions, including an amount paid to settle an action or satisfy a judgment, or arising from any investigative or other proceeding in which such individual is involved. The QBCA also provides that we must advance moneys to such individual for costs, charges and expenses incurred in connection with such a proceeding; provided that such individual shall repay such payment if he or she does not fulfill the conditions described below.

Indemnification is prohibited under the QBCA unless the individual:

- acted with honesty and loyalty in our interests, or in the interest of the other group for which the individual acted as director or officer or in a similar capacity at our request; and
- in the case of a proceeding that is enforced by a monetary penalty, the individual had reasonable grounds for believing that his or her conduct was lawful.

The QBCA and our bylaws authorize us to purchase and maintain insurance for the benefit of each of our current or former directors or officers and each person who acts or acted at our request as a director, officer or an individual acting in a similar capacity, of another entity.

In addition, we have entered, and intend to continue to enter, into separate indemnity agreements with each of our directors and officers. These indemnity agreements, among other things, require us to indemnify our directors and officers for certain expenses, including attorneys' fees, judgments, fines and settlement amounts incurred by a director or officer in any action or proceeding arising out of their services as a director or officer, or any other company or enterprise to which the person provides services at our request.

[Table of Contents](#)

The Registrant has purchased and currently intends to maintain insurance on behalf of each and every person who is or was a director or officer of the Registrant against any loss arising from any claim asserted against him or her and incurred by him or her in any such capacity, subject to certain exclusions.

The form of Underwriting Agreement for this initial public offering provides for indemnification by the underwriters of us and our officers and directors who sign this Registration Statement for specified liabilities, including matters arising under the Securities Act.

Item 15. Recent Sales of Unregistered Securities.

The following list sets forth information as to all securities we have sold since January 1, 2017 through the date of the prospectus that is a part of this registration statement:

Issuances of Common Shares

In January 2017, we issued and sold an aggregate of 98,977 of our common shares to two accredited investors at \$0.0006 per share for aggregate consideration of \$60.

Issuances of Options to Purchase Common Shares

From January 1, 2017 through the date of this registration statement, we granted options under our Repare Therapeutics Inc. Amended and Restated Option Plan to purchase an aggregate of 3,957,079 common shares, with exercise prices ranging from \$1.64 to \$13.28 per share, to our employees, directors and consultants. Of these, 266,687 shares have been issued upon the exercise of options, at a weighted average exercise price of \$1.83 per share, for aggregate proceeds of \$0.5 million, and 181,546 options have been cancelled.

Issuances of Preferred Shares

Series A Preferred Share Financing

In June 2017 and January 2019, we sold an aggregate of 10,182,844 of our Series A preferred shares in multiple closings to 12 accredited investors at a purchase price of \$4.91 per share for aggregate consideration of \$50.0 million. In connection with and as partial consideration for this financing, an aggregate principal amount of \$2.75 million of convertible promissory notes held by certain investors were redeemed and converted into 907,291 Series A preferred shares at a price of \$3.03 per share.

Series B Preferred Share Financing

In September 2019, we sold an aggregate of 10,468,258 of our Series B preferred shares to 21 accredited investors at a purchase price of \$7.88 per share for aggregate consideration of \$82.5 million.

None of the foregoing transactions involved any underwriters, underwriting discounts or commissions, or any public offering. Unless otherwise specified above, we believe these transactions were exempt from registration under the Securities Act in reliance on Section 4(a)(2) of the Securities Act (and Regulation D or Regulation S promulgated thereunder) or Rule 701 promulgated under Section 3(b) of the Securities Act as transactions by an issuer not involving any public offering or under benefit plans and contracts relating to compensation as provided under Rule 701. The recipients of the securities in each of these transactions represented their intentions to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof, and appropriate legends were placed on the share certificates issued in these transactions. 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.

Issuance of Warrant

In May 2020, in connection with our entry into a collaboration and license agreement with Bristol-Myers Squibb Company, or Bristol Myers Squibb, we entered into a warrant agreement with an affiliate of Bristol Myers Squibb. Pursuant to the terms of the warrant agreement, Bristol Myers Squibb paid us \$15 million in consideration for our issuance of a warrant. Immediately prior to the completion of this offering, the warrant will be automatically exercised for a number of our common shares equal to the subscription price of \$15 million divided by the initial public offering price of our common shares set forth on the cover page of this prospectus; *provided that*, in the event that either the offering is not consummated by December 31, 2020 or we deliver to Bristol Myers Squibb a written notice to the effect that we are no longer pursuing this proposed offering, the warrant will be automatically exercised for a specified number of preferred shares. Based on an assumed initial public offering price of \$19.00 per share, the midpoint of the range set forth on the cover page of the prospectus to which this offering relates, it is anticipated that Bristol Myers Squibb will acquire 789,474 of our common shares upon the automatic exercise in connection with the consummation of this offering.

Table of Contents

Item 16. Exhibits and Financial Statement Schedules.

(a) Exhibits.

The exhibits listed below are filed as part of this registration statement.

<u>EXHIBIT NUMBER</u>	<u>DESCRIPTION</u>
1.1*	Form of Underwriting Agreement.
3.1*	Amended and Restated Articles of Incorporation, as currently in effect.
3.2*	Certificate of Amendment dated June 12, 2020.
3.3*	Form of Articles of Continuance, to be effective immediately prior to the completion of this offering.
3.4*	Bylaws, as currently in effect.
3.5	Form of Amended and Restated Bylaws, to be effective immediately prior to the completion of this offering.
4.1*	Form of Common Share Certificate of the registrant.
4.2*	Amended and Restated Registration Rights Agreement, by and among the registrant and certain of its shareholders, dated September 3, 2019.
4.3*	Warrant Agreement by and between the registrant and BMS Strategic Portfolio Investments Holdings, Inc., dated May 26, 2020.
5.1	Opinion of Stikeman Elliott LLP.
10.1+*	Repare Therapeutics Inc. Amended and Restated Option Plan.
10.2+*	Form of Option Agreement under the Repare Therapeutics Inc. Amended and Restated Option Plan.
10.3+*	Form of 2020 Equity Incentive Plan.
10.4+*	Form of Share Option Grant Notice and Share Option Agreement under the 2020 Equity Incentive Plan.
10.5+*	Form of Restricted Share Unit Grant Notice and Restricted Share Unit Award Agreement under the 2020 Equity Incentive Plan.
10.6+*	Form of 2020 Employee Share Purchase Plan.
10.7*	Form of Indemnity Agreement by and between the registrant and its directors and officers.
10.8+*	Employment Agreement between the registrant and Lloyd M. Segal, dated June 12, 2020.
10.9+*	Employment Agreement between the registrant and Michael Zinda, dated June 12, 2020.
10.10+*	Employment Agreement between the registrant and Maria Koehler, dated June 12, 2020.
10.11+*	Separation Agreement between the registrant and Katina Dorton, dated October 21, 2019.
10.12++*	Lease by and between CIG III Technoparc Nominee Inc. and Pharmascience Inc., dated May 15, 2014, as amended November 24, 2016 and November 25, 2019.
10.13++*	Lease Assignment Agreement by and between the registrant and Pharmascience Inc., dated June 7, 2017.
10.14++*	Lease Agreement by and between the registrant and NEOMED Institute, dated November 26, 2019, as amended June 5, 2020.

Table of Contents

<u>EXHIBIT NUMBER</u>	<u>DESCRIPTION</u>
10.15†*	Research Services, License and Collaboration Agreement by and between the registrant and Ono Pharmaceutical Co., Ltd., dated January 31, 2019.
10.16†*	Amended and Restated License Agreement by and between the registrant and New York University, dated July 9, 2018.
10.17†*	Collaboration and License Agreement by and between the registrant, Repare Therapeutics USA Inc. and Bristol-Myers Squibb Company, dated May 26, 2020.
21.1*	Subsidiaries of the registrant.
23.1	Consent of Ernst & Young LLP, an Independent Registered Public Accounting Firm.
23.2	Consent of Stikeman Elliott LLP (included in Exhibit 5.1).
24.1*	Power of Attorney.
24.2*	Power of Attorney of Ann D. Rhoads.

* Previously filed.

+ Indicates a management contract or compensatory plan.

† Certain portions of this exhibit (indicated by asterisks) have been omitted because they are not material and would likely cause competitive harm to Repare Therapeutics Inc. if publicly disclosed.

++ Certain schedules and exhibits to this exhibit have been omitted pursuant to Item 601(a)(5) of Regulation S-K. A copy of any omitted schedule and/or exhibit will be furnished to the SEC upon request.

(b) Financial Statement Schedules.

Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statements or notes thereto.

Item 17. Undertakings.

The undersigned registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreement certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

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 foregoing provisions, 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 of 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 that:

1. 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.
2. 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 has duly caused this amendment no. 2 to the registration statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Montréal, Province of Québec, Canada on June 17, 2020.

REPARE THERAPEUTICS INC.

By: /s/ Lloyd M. Segal
Lloyd M. Segal
President and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this registration statement on Form S-1 has been signed by the following persons in the capacities and on the dates indicated.

<u>SIGNATURE</u>	<u>TITLE</u>	<u>DATE</u>
<u>/s/ Lloyd M. Segal</u> Lloyd M. Segal	President, Chief Executive Officer and Director <i>(Principal Executive Officer)</i>	June 17, 2020
<u>/s/ Steve Forte</u> Steve Forte	Executive Vice President, Chief Financial Officer <i>(Principal Financial Officer and Principal Accounting Officer)</i>	June 17, 2020
<u>*</u> Jerel Davis, Ph.D.	Chairman of the Board of Directors	June 17, 2020
<u>*</u> David Bonita, M.D.	Director	June 17, 2020
<u>*</u> Todd Foley	Director	June 17, 2020
<u>*</u> Samarth Kulkarni, Ph.D.	Director	June 17, 2020

[Table of Contents](#)

<u>SIGNATURE</u>	<u>TITLE</u>	<u>DATE</u>
<hr/> * Briggs Morrison, M.D.	Director	June 17, 2020
<hr/> * Kevin J. Raidy	Director	June 17, 2020
<hr/> * Ann D. Rhoads	Director	June 17, 2020
<hr/> * Carol A. Schafer	Director	June 17, 2020

*By: /s/ Lloyd Segal
 Lloyd Segal
 Attorney-in-Fact

SIGNATURE OF AUTHORIZED U.S. REPRESENTATIVE OF THE REGISTRANT

Pursuant to the Securities Act, the undersigned, the duly authorized representative in the United States of the registrant has signed this registration statement or amendment thereto on the 17th day of June, 2020.

REPARE THERAPEUTICS USA INC.

By: /s/ Lloyd M. Segal
Lloyd M. Segal
President and Chief Executive Officer

REPAIRE THERAPEUTICS INC.

BY-LAW NO. 2020-1

ARTICLE 1
INTERPRETATION

1.1 Definitions.

As used in this by-law, the following terms and expressions have the following meanings:

“**Act**” means the *Business Corporations Act* (Quebec) and the regulations under it, as amended, re-enacted or replaced from time to time.

“**applicable securities laws**” means (i) the applicable securities legislation of each relevant province of Canada, as amended from time to time, the written rules, regulations and forms made or promulgated under any such statute and the published national instruments, multilateral instruments, policies, bulletins and notices of the securities commissions and similar regulatory authorities of each province of Canada and (ii) the applicable United States federal and state securities laws, including without limitation, the United States Securities Act of 1933, the United States Securities Exchange Act of 1934, each as amended from time to time, and the rules and regulations promulgated thereunder.

“**Authorized Signatory**” has the meaning specified in Section 2.2.

“**Board**” means the board of directors of the Corporation, and “**director**” means a member of the Board;

“**Corporation**” means Repaire Therapeutics Inc.

“**meeting of shareholders**” means an annual meeting of shareholders or a special meeting of shareholders.

“**person**” is to be interpreted broadly and includes an individual, partnership, corporation, company, trust, unincorporated association, joint venture or other entity or governmental or regulatory entity, and pronouns are to have a similarly extended meaning.

“**public announcement**” means disclosure in a press release reported by a national news service in the United States or Canada, or in a document publicly filed by the Corporation under its profile on EDGAR at www.sec.gov or on SEDAR at www.sedar.com, or any system that is a replacement or successor thereto.

“**Recorded Address**” means (i) in the case of a shareholder, the shareholder’s latest address as shown in the records of the Corporation, (ii) in the case of shareholders holding shares jointly, the address appearing in the records of the Corporation in respect of the joint holding or, if there is more than one address in respect of the joint holding, the first address that appears, and, (iii) in the case of a director, officer or auditor, the person’s latest address as shown in the records of the Corporation or, if applicable, in the last notice filed with the enterprise registrar pursuant to the *Act respecting the legal publicity of enterprises* (Quebec), whichever is the most recent.

“show of hands” means, in connection with a meeting, a show of hands by persons present and entitled to vote at the meeting, the functional equivalent of a show of hands by telephonic, electronic or other means of communication and any combination of such methods.

Terms and expressions used in this by-law which are defined in the Act have the meanings respectively given to them in the Act unless defined otherwise herein.

1.2 Construction.

The division of this by-law into Articles and other subdivisions and the insertion of headings are for convenient reference only and do not affect its interpretation.

1.3 Gender and Number.

Any reference to, or use of, gender in this by-law includes all genders. Words importing only the singular number include the plural and *vice versa*.

1.4 Precedence.

This by-law is subject to, and should be read in conjunction with, the Act and the articles. If there is any conflict or inconsistency between any provision of the Act or the articles and any provision of this by-law, the provision of the Act or the articles will govern.

ARTICLE 2 BUSINESS OF THE CORPORATION

2.1 Fiscal Year.

The fiscal year of the Corporation ends on December 31st or such date of each year as the Board determines from time to time.

2.2 Signing of Documents and Voting Rights.

Contracts, documents and instruments may be signed on behalf of the Corporation manually, by facsimile, or by electronic means by (i) any by any director or officer of the Corporation (unless otherwise determined by the Board) or (ii) any other person authorized by the Board from time to time. Each person referred to in (i) and (ii) is an “**Authorized Signatory**”.

Voting rights for securities held by the Corporation may be exercised on behalf of the Corporation by any one Authorized Signatory.

As used in this Section, the phrase “**contracts, documents and instruments**” means any and all kinds of contracts, documents and instruments in written, facsimile or electronic form, including cheques, drafts, orders, guarantees, notes, acceptances and bills of exchange, deeds, mortgages, hypothecs, charges, conveyances, transfers, assignments, powers of attorney, agreements, proxies, releases, receipts, discharges and certificates, and all other paper, facsimile or electronic writings.

ARTICLE 3 DIRECTORS

3.1 Number.

Subject to the requirements of the Act applicable to reporting issuers, the number of directors of the Corporation when a minimum number and a maximum number are specified in the articles is, at any time, the number of directors holding office immediately following the most recent election or appointment of directors, whether by the shareholders at a meeting of the shareholders, or by the Board pursuant to the Act.

No decrease in the number of directors will shorten the term of an incumbent director.

3.2 Classes of Director.

Subject to the rights of the holders of any series of preferred shares to elect additional directors under specified circumstances, the directors shall be divided into three classes designated as Class I, Class II and Class III, respectively, with each such class having a term not exceeding three years to be fixed by the Board from time to time. The Board is authorized to assign members of the Board already in office to such classes at the time the classification becomes effective. At the first annual meeting of shareholders following the initial classification of the Board, the term of office of the Class I directors shall expire and Class I directors shall be elected for a full term of up to three years. At the second annual meeting of shareholders following the initial classification of the Board, the term of office of the Class II directors shall expire and Class II directors shall be elected for a full term of up to three years. At the third annual meeting of shareholders following the initial classification of the Board, the term of office of the Class III directors shall expire and Class III directors shall be elected for a full term of up to three years. At each succeeding annual meeting of shareholders, directors shall be elected for a full term of up to three years to succeed the directors of the class whose terms expire at such annual meeting.

3.3 Election and Term of Office.

The directors are elected at the annual meeting of shareholders by a majority of the votes cast. The vote for the election of directors is by show of hands, unless a ballot is requested by a shareholder present and entitled to vote at the meeting.

The term of office of a director starts on the date of the meeting of shareholders at which he or she is elected or on such other date as the shareholders determine. Each director remains in office for a term not exceeding three years or until a successor is elected, unless his or her mandate otherwise ends before the completion of his or her term. A director not elected for an expressly stated term ceases to hold office at the close of the first annual meeting of shareholders following his or her election. A director whose mandate has expired is eligible for another term.

All steps taken by a meeting of the directors or by any person acting as a director, until their successors have been duly elected or appointed, shall, notwithstanding that it is subsequently discovered that there was some defect in the election of the directors or of such person acting as a director or that any one of them was disqualified, be as valid as if the directors or such other person, as the case may be, had been duly elected and were qualified to be directors of the Corporation.

3.4 Remuneration

The Board determines the remuneration of the directors from time to time, by resolution. The directors are also entitled to be reimbursed for travel costs and reasonable expenses incurred in the performance of their duties.

3.5 Calling and Place of Meetings.

The chair of the Board, the chief executive officer or the president if the chair of the Board is unavailable, or the majority of directors then in office may at any time call a meeting of directors, to be held at the time and place the person or persons calling the meeting determine. The secretary shall cause notice of a meeting of directors to be given when so directed by such person or persons.

Meetings of directors may be held at any place in or outside Canada.

3.6 Notice of Meeting.

Notice of the time and place for the holding of any meeting of directors will be given to each director not less than 48 hours before the time when the meeting is to be held, provided that meetings of directors may be held at any time without notice if all the directors have waived notice.

If a quorum of directors, as defined in Section 3.8 below, is present, a meeting of directors may be held, without notice, immediately following the annual meeting of shareholders.

A notice of a meeting of directors need not specify the purpose of, or the business to be transacted at, the meeting; it must, however, specify the time and place of the meeting, and where applicable, any matter to be dealt with at the meeting that relates to powers the Board may not delegate.

A notice of meeting must be sent to each director, at his or her last known civic or electronic address, by any means providing proof of its sending.

In all cases in which the chair of the Board, the vice-chair of the Board, if any, the president and chief executive officer or the majority of the directors in office consider, in their discretion, that it is urgent to call a meeting of the directors, they may cause a notice of such meeting to be given by any means which they deem sufficient at least two (2) hours before the meeting is to be held, and such notice shall be sufficient for such meeting.

3.7 Waiver.

A director may waive notice of a meeting of directors, any irregularity in a notice of meeting of directors or any other irregularity in the calling or holding of a meeting of directors. Such waiver must be given in writing and may be given at any time either before or after the meeting to which it relates. Waiver of notice of a meeting of directors cures any irregularity in the notice or in its timeliness, and any failure to give the notice.

Attendance of a director at a meeting of directors constitutes waiver of notice of the meeting, except when such director attends a meeting for the sole purpose of objecting to the holding of the meeting on the grounds that it was not lawfully called.

3.8 Quorum.

Unless otherwise provided in a resolution of the Board, the majority of the directors then in office constitutes a quorum at any meeting of directors. A quorum of directors may exercise all the powers of the directors despite any vacancy among the directors.

3.9 Chair and Secretary.

The chair of any meeting of directors is the first mentioned of the following who is a director and is present at the meeting: (i) the chair of the Board; (ii) the vice-chair of the Board, if any, and (iii) if no such person is present at the meeting, the participating director that is assigned by the other directors present at the meeting.

The secretary will act as secretary at meetings of directors. If a secretary has not been appointed or the secretary is absent, the chair of the meeting shall appoint a person, who need not be a director, to act as secretary for the meeting.

3.10 Votes to Govern.

Any question at a meeting of directors will be decided by a majority of the votes cast on the question at the meeting. Each director is entitled to one vote. In case of an equality of votes, whether the vote is by show of hands or ballot, the chair of the meeting will not be entitled to a second or casting vote.

Voting shall be carried out by a show of hands, or at the request of a director, by secret ballot. A vote by secret ballot may be requested before or after a vote by show of hands. If voting is by secret ballot, the secretary acts as scrutineer and counts the ballots.

3.11 Dissent.

A director who is present at a meeting of the Board or a committee of the Board is deemed to have consented to any resolution passed at the meeting unless:

- (1) the director's dissent has been entered in the minutes;
- (2) the director sends a written dissent to the secretary of the meeting before the meeting is adjourned; or
- (3) the director delivers a written dissent to the chair of the Board, sends it to the chair by any means providing proof of the date of receipt or delivers it to the head office of the Corporation immediately after the meeting is adjourned.

A director is not entitled to dissent after voting for or consenting to a resolution.

3.12 Dissent of an Absent Director.

A director who was not present at a meeting at which a resolution was passed is deemed to have consented to the resolution unless the director records his or her dissent in accordance with the Act within seven (7) days after becoming aware of the resolution.

3.13 Adjournment.

The chair of any meeting of the directors may, with the consent of the majority of those directors who are present at the meeting, adjourn the meeting to a fixed time and place. No notice of the time and place for the continuance of the adjourned meeting need be given to any director in such a case.

An adjourned meeting is duly constituted if held in accordance with the terms of the adjournment and a quorum is present at the adjourned meeting. The directors who formed the quorum at the original meeting are not required to form the quorum at the adjourned meeting.

3.14 Electronic Meetings.

If all the directors consent thereto generally or in respect of a particular meeting, a director may participate in a meeting of directors by means of equipment enabling all participants to communicate directly with one another. A director participating in a meeting by such means is deemed to be present at the meeting. Any consent is effective whether given before or after the meeting to which it relates and may be given in respect of all meetings of the directors.

3.15 Resolution in lieu of Meeting.

A resolution in writing, signed by all the directors entitled to vote on that resolution, has the same force as if it had been passed at a meeting of the directors. A copy of the resolution must be kept with the minutes of the meetings of the directors.

A resolution in writing that is signed electronically by the directors is as legally valid as if it were signed by written signature.

3.16 Record Date.

The Board may fix, in conformity with the Act and applicable securities laws, a date as the record date for the purpose of determining shareholders entitled to receive notice of a meeting of shareholders, receive payment of a dividend, participate in a liquidation or distribution and vote at a meeting of shareholders or for any other purpose. Only registered shareholders at the record date thus fixed are entitled to receive notice of a meeting of shareholders, receive payment of a dividend, participate in a liquidation or distribution or vote at a meeting of shareholders or for any other purpose, as the case may be, notwithstanding any transfer of shares recorded in the securities register of the Corporation after the record date.

**ARTICLE 4
COMMITTEES**

4.1 Committees of Directors.

The Board may appoint one or more committees made up of directors. The number of directors of any committee of the Board shall be the number set out in the resolution appointing the committee. A committee of the Board exercises the powers delegated to it by the Board. The Board may delegate to such committees any of the powers of the directors, except those powers that under the Act the directors may not delegate.

4.2 Proceedings.

Unless otherwise determined by the Board, each committee of directors may make, amend or repeal rules and procedures to regulate its meetings including: (i) fixing the quorum, provided it is not less than a majority of the members of the committee; (ii) procedures for calling meetings; (iii) requirements for providing notice of meetings; (iv) selecting a chair for a meeting; and (v) determining whether the chair will have a deciding vote in the event there is an equality of votes cast on a question.

Subject to any such rules or procedures established to regulate its meetings, Sections 3.1 to 3.15 hereof apply to any committee of directors, with such changes as are necessary.

4.3 Cessation of office.

A director may resign from a committee of the Board at any time. The resignation of a director becomes effective at the time the director's written resignation is received by the Corporation, or at the time specified in the resignation, whichever is later. The reason for the resignation is not required to be given.

The Board may, by resolution, replace a member of a committee of the Board.

4.4 Vacancy.

The Board may fill any vacancy on a committee of the Board.

4.5 Remuneration.

The directors on a committee of the Board may, as such, receive the remuneration set by resolution of the Board.

**ARTICLE 5
OFFICERS**

5.1 Appointment.

The Board may appoint officers of the Corporation who may include any of the following: a chair of the Board, a president, one or more vice-presidents, a chief executive officer, a chief operating officer, a chief financial officer, a secretary, and one or more assistants to any of the appointed officers. The same person may hold more than one position as officer. None of them need be a director or shareholder of the Corporation, except for the chair of the Board who must be a director.

5.2 Cessation of Office.

An officer may resign at any time. The resignation of an officer takes effect on the date the Corporation receives the written notice he or she gives or on the later date indicated therein.

The Board or the chief executive officer may remove an officer from office at any time, with or without cause. Such removal is without prejudice to the officer's rights, if any, under any contract or laws governing his or her employment. However, the removal of the president, the Chair of the Board, the chief executive officer, the chief operating officer, or the chief financial officer regardless of their title, as their appointment, is the responsibility of the Board.

5.3 Vacancy

The Board may fill any vacancy in an office at any time.

5.4 Powers of Officers.

An officer exercises the powers attached to his or her position. He or she also exercises all the powers which the Board can delegate to him or her. In the event an officer is unable to act, the powers of such officer are exercised by any other person designated by the Board.

ARTICLE 6 PROTECTION OF DIRECTORS, OFFICERS AND OTHERS

6.1 Indemnity.

In accordance with the Act, the Corporation shall indemnify (i) any director or officer of the Corporation and any former director or officer of the Corporation, (ii) any mandatary of the Corporation, and (iii) any other person who acts or acted at the Corporation's request as a director or officer of another group against all costs, charges and expenses reasonably incurred in the exercise of their functions, including an amount paid to settle an action or satisfy a judgment, or arising from any investigative or other proceeding in which the person is involved because of that association with the Corporation or other entity. The Corporation shall also advance moneys to such a director, officer or other person for the costs, charges and expenses of such a proceeding in accordance with the Act.

The Corporation is authorized to sign agreements in favour of any of the foregoing persons evidencing the terms of this indemnity. Nothing in this by-law limits the right of any person entitled to indemnity to claim indemnity apart from the provisions of this by-law.

6.2 Limits on Indemnity.

The Corporation may not indemnify or advance moneys to a person described in Section 6.1 in the event that a court or any other competent authority judges that the conditions for indemnification set out in the Act are not fulfilled or determines that such person has committed an intentional or gross fault.

6.3 Liability Insurance.

The Corporation must purchase and maintain insurance for the benefit of its directors, officers and other mandataries against any liability they may incur as such or in their capacity as directors, officers or mandataries of another group, if they act or acted in that capacity at the Corporation's request. Notwithstanding the foregoing, the Corporation may, as an alternative or in addition to purchasing and maintaining an insurance policy, implement and maintain a valid and irrevocable trust that provides substantially similar coverage as would a policy of insurance contemplated by this Section, as may be approved by the Board.

**ARTICLE 7
SHAREHOLDERS**

7.1 General.

The Corporation must hold an annual meeting of shareholders; it may hold one or more special meetings of shareholders as needed. An annual meeting must be held not later than fifteen (15) months after the last preceding annual meeting of shareholders.

7.2 Calling and Place of Meetings.

The Board has the power to call annual and special meetings of shareholders, to be held on the date and at the time and place it determines; however, such a meeting of shareholders may be held at a place outside the province of Quebec if the articles so allow.

7.3 Notice of Meeting.

Subject to the *Securities Act* (Quebec) and applicable securities laws, the notice of a meeting of shareholders must be sent to each shareholder entitled to vote at the meeting and to each director. The time period to provide notice of a meeting of shareholders is not less than 21 days and not more than 60 days before the meeting.

The notice of meeting is sent to the shareholders entered in the securities register at the record date.

A certificate from the secretary or any other duly authorized officer of the Corporation in office at the time of the preparation of such certificate, or any officer, transfer agent, or share transfer registrar of the Corporation, constitutes proof of the sending of the notice of meeting and shall be binding upon each person entitled to receive the notice of meeting.

Irregularities in the notice of meeting or in the sending thereof do not affect the validity of the meeting. Similarly, the unintentional failure to send a notice of meeting to a person entitled to it, or the failure to receive it by a person entitled to the notice, does not invalidate the resolutions passed at the meeting. In addition, the unintentional failure to include a matter to be discussed at the meeting in the notice does not prevent the meeting from discussing such business, unless the interests of a shareholder or director are or could be affected thereby.

7.4 Waiver.

A shareholder or director may waive notice of a meeting of shareholders. Such waiver may be given in any manner and at any time either before or after the meeting to which it relates. Waiver of notice of a meeting of shareholders cures any irregularity in the notice or in its timeliness, and any failure to give the notice.

Attendance by a shareholder or director at a meeting of shareholders constitutes waiver of notice of the meeting, except when such person attends the meeting for the sole purpose of objecting to the holding of the meeting on the grounds that it was not lawfully called or held.

7.5 Persons Entitled to be Present.

The only persons entitled to be present at a meeting of shareholders are those persons entitled to vote at the meeting, the directors, the auditor, if any and if called upon to attend, and others who, although not entitled to vote, are entitled or required under any provision of the Act, the articles, or the by-laws to be present at the meeting. Any other person may be admitted with the consent of the chair of the meeting or, if any of the persons present who are entitled to vote at the meeting request a vote on such matter, with the consent of such persons.

If a director or a shareholder entitled to vote at a meeting of shareholders gives written notice not less than 10 days before the meeting to the auditor or a former auditor of the Corporation, the auditor or former auditor attends the meeting at the Corporation's expense and answers any question relating to its duties as auditor.

7.6 Quorum.

A quorum of shareholders is present at a meeting of shareholders if, at the opening of the meeting, two persons representing at least twenty-five per cent (25%) of the shares that carry the right to vote at the meeting are present in person or represented by proxy.

The actions taken by holders of the majority of shares so represented, which entitle their holders to vote, are considered as actions taken by all shareholders, unless the vote or consent of holders of a greater number of shares is required or prescribed by the applicable legislation, the articles or the by-laws.

7.7 Proxies.

A proxy must comply with the applicable requirements of the Act and other applicable law and must be in such form as the Board may approve from time to time or such other form as may be acceptable to the chair of the meeting at which it is to be used.

A proxy will be acted on only if it is deposited with the Corporation or its agent prior to the time specified in the notice calling the meeting at which the proxy is to be used, or, if it is deposited with the secretary, the scrutineer for the meeting or the chair of the meeting prior to the time of voting. Unless otherwise indicated, a proxy may be revoked at any time and lapses one year after the date it is given.

The Board may, by resolution, fix the latest date and time for delivery of proxies to the Corporation or to its agent and indicate such date and time in the notice of meeting, which date and time, as provided above, shall not be more than 48 hours before the date of the meeting or any adjournment thereof.

7.8 Chair, Secretary and Scrutineers.

The chair of any meeting of shareholders is the first mentioned of the following persons who is present at the meeting: (i) the chair of the Board; (ii) the vice-chair of the Board, if any; (iii) the president, (iv) the chief executive officer and (v) any other person that may be named by the Board from time to time.

The secretary will act as secretary at meetings of shareholders. If a secretary has not been appointed or the secretary is absent, the chair of the meeting shall appoint a person, who need not be a shareholder, to act as secretary of the meeting.

The chair of the meeting may appoint one or more persons, who need not be shareholders, to act as scrutineers at any meeting of shareholders and, in that capacity, to report to the chair such information as to attendance, representation, voting and other matters at such meeting as the chair of the meeting directs.

7.9 Procedure.

The chair of a meeting of shareholders will conduct the meeting and determine the procedure to be followed at the meeting. The chair's decision on all matters or things, including the validity or invalidity of a form of proxy or other instrument appointing a proxy, will be conclusive and binding upon the meeting of shareholders.

7.10 Manner of Voting.

Subject to the Act, any question at a meeting of shareholders will be decided by a show of hands, unless a ballot on the question is required or demanded. Subject to the Act, the chair of the meeting may require, or any shareholder who is present and entitled to vote may demand, a ballot on

any question at a meeting of shareholders. The requirement or demand for a ballot may be made either before or after any vote on the question by a show of hands. A ballot will be taken in the manner the chair of the meeting directs. A requirement or demand for a ballot may be withdrawn at any time prior to the taking of the ballot. The result of such ballot will determine the decision of the shareholders upon the question.

In the case of a vote by a show of hands, each person present who is entitled to vote has one vote. If a ballot is taken, each person present who is entitled to vote has the number of votes that are attached to the shares which such person is entitled to vote at the meeting.

A proxyholder has the same rights as the shareholder represented to vote at the meeting. A proxyholder who has conflicting instructions from more than one shareholder may not, however, vote by show of hands.

7.11 Electronic Meetings.

Meetings of shareholders may be held solely by means of equipment enabling all participants to communicate directly with one another. Any person entitled to attend a meeting of shareholders who participates by such means is deemed for purposes of the Act to be present at the meeting. The Board may establish procedures regarding the holding of meetings of shareholders by such means.

Any shareholder participating in a meeting of shareholders by means of equipment enabling all participants to communicate directly with one another may vote by any means enabling votes to be cast in a way that allows them to be verified afterwards, whether the vote is by a functional equivalent of a show of hands or by ballot, and protects the secrecy of the vote when a ballot has been requested.

7.12 Votes to Govern.

Any question at a meeting of shareholders will be decided by a majority of the votes cast on the question unless the Act, the articles, the by-laws, applicable securities laws or stock exchange rules require otherwise. In case of an equality of votes, whether the vote is by a show of hands or by a ballot, the chair of the meeting is not entitled to a second or casting vote.

The Corporation shall keep at its head office the ballots cast and the proxies presented at a meeting of shareholders for at least three months after the meeting.

7.13 Adjournment.

The chair of a meeting of shareholders may, with the consent of the persons present who are entitled to vote at the meeting, adjourn the meeting to a fixed time and place, subject to such conditions as such persons may decide and to the relevant provisions of the Act for the giving of notice.

An adjourned meeting is duly constituted if held in accordance with the terms of the adjournment and a quorum is present at the adjourned meeting. Any business which might have been considered and transacted at the original meeting of shareholders may be considered and transacted at the adjourned meeting.

7.14 Resolution in lieu of Meeting.

A resolution in writing, signed by all the shareholders entitled to vote on that resolution, is as valid as if it had been passed at a meeting of shareholders. The resolution must be kept with the minutes of the meetings of shareholders.

**ARTICLE 8
SHARES**

8.1 Share Certificates and Written Notice of Uncertificated Shares.

Subject to the Act, share certificates, if required, will be in the form that the Board approves from time to time or that the Corporation adopts.

Subject to the Act, the written notice to be provided in the case of uncertificated shares, if any, will be in the form that the Board approves from time to time or that the Corporation adopts.

8.2 Transfer of Shares.

No transfer of shares issued by the Corporation will be registered except in accordance with the requirements of applicable law, including the *Act respecting the transfer of securities and the establishment of security entitlements* (Quebec).

**ARTICLE 9
DIVIDENDS AND OTHER DISTRIBUTIONS**

9.1 Declaration of dividends

Unless otherwise provided in the articles, the Board may declare and the Corporation may pay a dividend either in money or property or by issuing fully paid shares or options or rights to acquire fully paid shares of the Corporation.

The Corporation may not declare and pay a dividend, except by issuing shares or options or rights to acquire shares, if there are reasonable grounds for believing that the Corporation is, or would after the payment be, unable to pay its liabilities as they become due.

The Corporation may deduct from the dividends payable to a shareholder any amount due to the Corporation by the shareholder, on account of calls for payment or otherwise.

9.2 Record Date

The Board may fix, in advance, in accordance with the articles and applicable securities laws, a record date for the determination of the shareholders entitled to receive dividends.

9.3 Payments of Dividends and Other Distributions.

Any dividend or other distribution payable in cash to shareholders may be paid by cheque, by electronic means, or by any other method the Board determines. The payment will be made to or to the order of each registered holder of shares in respect of which the payment is to be made. Cheques will be sent to the registered holder's Recorded Address, unless the holder otherwise directs. In the case of joint holders, the payment will be made to the order of all such joint holders and, if applicable, sent to them at their Recorded Address, unless such joint holders otherwise direct.

The sending of the cheque, the sending of the payment by electronic means, or the sending of the payment by any other method determined by the Board, in an amount equal to the dividend or other distribution to be paid, less any tax that the Corporation is required to withhold, will satisfy and discharge the liability for the payment, unless payment is not made upon presentation.

ARTICLE 10
ADVANCE NOTICE

10.1 Nomination Procedures.

Subject only to the Act, applicable securities laws and stock exchange rules and the articles, only persons who are nominated in accordance with the procedures set out in this Article 10 shall be eligible for election as directors of the Corporation. Nominations of persons for election to the Board may be made at any annual meeting of shareholders, or at a special meeting of shareholders if the election of directors is a matter specified in the notice of meeting:

- (1) by or at the direction of the Board, including pursuant to a notice of meeting;
- (2) by or at the direction or request of one or more shareholders pursuant to a proposal made in accordance with the provisions of the Act, or a requisition of a meeting of shareholders by one or more shareholders made in accordance with the provisions of the Act; or
- (3) by any person (a “**Nominating Shareholder**”) who:
 - (a) at the close of business on the date of the giving of the notice provided for below in this Article 10 and on the record date for notice of such meeting, is entered in the securities register of the Corporation as a holder of one or more shares carrying the right to vote at such meeting or who beneficially owns shares that are entitled to be voted at such meeting and provides evidence of such beneficial ownership to the Corporation; and
 - (b) complies with the notice procedures set forth below in this Article 10.

10.2 Nominations for Election.

For the avoidance of doubt, the procedures set forth in this Article 10 shall be the exclusive means for any person to bring nominations for election to the directors before any meeting of shareholders of the Corporation.

10.3 Timely Notice.

In addition to any other applicable requirements, for a nomination to be validly made by a Nominating Shareholder, the Nominating Shareholder must have given timely notice thereof in proper written form to the secretary in accordance with this Article 10.

10.4 Manner of Timely Notice.

To be timely, a Nominating Shareholder’s notice to the secretary must be made:

- (1) in the case of an annual meeting of shareholders (including an annual and special meeting), not less than thirty (30) nor more than sixty (60) days prior to the date of the meeting, provided, however, that in the event that the meeting is to be held on a date that is less than fifty (50) days after the date (the “**Notice Date**”) on which the first public announcement of the date of the meeting was made, notice by the Nominating Shareholder shall be made not later than the close of business on the tenth (10th) day following the Notice Date; and
- (2) in the case of a special meeting (which is not also an annual meeting) of shareholders called for the purpose of electing directors (whether or not also called for other purposes), not later than the close of business on the fifteenth (15th) day following the day on which the first public announcement of the date of the meeting was made.

In no event shall any adjournment or postponement of an annual meeting or special meeting of shareholders or any announcement thereof commence a new time period for the giving of a timely notice under this Section 10.4.

10.5 Proper Form of Notice.

To be in proper written form, a Nominating Shareholder's notice to the secretary must be in writing and must set forth or be accompanied by, as applicable:

- (1) as to each person whom the Nominating Shareholder proposes to nominate for election as a director (each a "**Proposed Nominee**"):
 - (a) the name, age, business address and residential address of the Proposed Nominee;
 - (b) the principal occupation, business or employment of the Proposed Nominee, both present and for the five years preceding the notice;
 - (c) the number of securities of each class of voting securities of the Corporation or any of its subsidiaries beneficially owned, or controlled or directed, directly or indirectly, by the Proposed Nominee, as of the record date for the meeting of shareholders (if such date shall then have been made publicly available and shall have occurred) and as of the date of such notice;
 - (d) a description of any relationship, agreement, arrangement or understanding (including financial, compensatory or indemnity related or otherwise) between the Nominating Shareholder and the Proposed Nominee, or any affiliates or associates of, or any person or entity acting jointly or in concert with the Nominating Shareholder or the Proposed Nominee, in connection with the Proposed Nominee's nomination and election as director;
 - (e) whether the Proposed Nominee is party to any existing or proposed relationship, agreement, arrangement or understanding with any competitor of the Corporation or its affiliates or any other third party which may give rise to a real or perceived conflict of interest between the interests of the Corporation and the interests of the Proposed Nominee;
 - (f) whether the Proposed Nominee is eligible for consideration as an independent director under the relevant standards contemplated by applicable securities laws or any stock exchange rules that may be applicable to the Corporation; and
 - (g) any other information relating to the Proposed Nominee that would be required to be disclosed in a dissident's proxy circular or other filings required to be made in connection with the solicitation of proxies for election of directors pursuant to the Act or any applicable securities laws;
- (2) as to each Nominating Shareholder:
 - (a) the name, business and, if applicable, residential address of such Nominating Shareholder;
 - (b) the number of securities of each class of voting securities of the Corporation or any of its subsidiaries beneficially owned, or controlled or directed, directly or indirectly, by such Nominating Shareholder or any other person with whom such Nominating Shareholder is acting jointly or in concert (and for each such person any options or other rights to acquire shares in the capital of the Corporation, any derivatives or other securities, instruments or arrangements for which the price or value or delivery,

payment or settlement obligations are derived from, referenced to, or based on any such shares, and any hedging transactions, short positions and borrowing or lending arrangements relating to such shares) with respect to the Corporation or any of its securities, as of the record date for the meeting (if such date shall then have been made publicly available and shall have occurred) and as of the date of such notice;

- (c) the interests in, or rights or obligations associated with, any agreement, arrangement or understanding, the purpose or effect of which may be to alter, directly or indirectly, such Nominating Shareholder's economic interest in a security of the Corporation or such Nominating Shareholder's economic exposure to the Corporation;
 - (d) full particulars regarding any proxy, contract, arrangement, agreement, understanding or relationship pursuant to which such Nominating Shareholder, or any of its affiliates or associates, or any person acting jointly or in concert with such person, has any interests, rights or obligations relating to the voting of any securities of the Corporation or the nomination of directors to the Board; and
 - (e) any other information relating to such Nominating Shareholder that would be required to be disclosed in a dissident's proxy circular or other filings required to be made in connection with the solicitation of proxies for election of directors pursuant to the Act or any applicable securities laws; and
- (3) a written consent duly signed by each Proposed Nominee to being named as a nominee for election to the Board and to serve as a director of the Corporation, if elected.

Reference to "**Nominating Shareholder**" in this Section 10.5 shall be deemed to refer to each shareholder that nominates or seeks to nominate a person for election as director in the case of a nomination proposal where more than one shareholder is involved in making the nomination proposal.

The Corporation may also require any Proposed Nominee to furnish such other information, including completion of the Corporation's directors questionnaire, as it may reasonably require to determine whether the nominee would be considered "**independent**" as a director or as a member of the audit committee of the directors under the various rules and standards applicable to the Corporation in the same manner as such rules and standards are applicable to the Corporation's other directors.

In addition to the provisions of this Article 10, a Nominating Shareholder and any Proposed Nominee shall also comply with all of the applicable requirements of the Act, applicable securities laws and applicable stock exchange rules regarding the matters set forth herein.

10.6 Currency of Notice.

All information to be provided in a Nominating Shareholder's notice pursuant to this Article 10 shall be provided as of the date of such notice. To be considered timely and in proper form, a Nominating Shareholder's notice shall be promptly updated and supplemented if necessary, so that the information provided or required to be provided in such notice shall be true and correct as of the record date for the meeting.

10.7 Power of the Chair.

No person shall be eligible for election as a director of the Corporation unless nominated in accordance with the provisions of the by-laws; provided, however, that nothing in the by-laws shall be deemed to preclude discussion by a shareholder (as distinct from the nomination of directors) at a meeting of shareholders of any matter in respect of which it would have been entitled to submit a proposal pursuant to the provisions of the Act. The chair of the meeting shall have the power and duty to determine whether a nomination was made in accordance with the procedures set forth in this Article 10 and, if any proposed nomination is not in compliance with this Article 10, to declare that such defective nomination shall be disregarded.

10.8 Delivery of Notice.

Notwithstanding any other provision of this Article 10, notice given to the secretary pursuant to this Article 10 may only be given by personal delivery, facsimile transmission or by email (at such email address as stipulated from time to time by the secretary for purposes of this notice), and shall be deemed to have been given and made only at the time it is served by personal delivery, email (at the aforesaid address) or sent by facsimile transmission (provided that receipt of the confirmation of such transmission has been received) to the secretary, at the address of the principal executive offices of the Corporation, provided that if such delivery or electronic communication is made on a day which is not a business day or later than 5:00 p.m. (Eastern time) on a day which is a business day, then such delivery or electronic communication shall be deemed to have been made on the subsequent day that is a business day.

10.9 Director Discretion.

Notwithstanding the foregoing, the Board may, in its sole discretion, waive any requirement in this Article 10.

ARTICLE 11 FORUM SELECTION

Unless the Corporation approves or consents in writing to the selection of an alternative forum, the courts of the Province of Québec and the appellate courts therefrom shall, to the fullest extent permitted by law, be the sole and exclusive forum for: (i) any derivative action or proceeding brought on behalf of the Corporation; (ii) any action or proceeding asserting a claim for breach of a fiduciary duty owed by any director, officer or other employee of the Corporation to the Corporation; (iii) any action or proceeding asserting a claim arising pursuant to any provision of the Act or the articles or the by-laws of the Corporation (as either may be amended from time to time); or (iv) any action or proceeding asserting a claim otherwise related to the affairs of the Corporation. If any action or proceeding the subject matter of which is within the scope of the preceding sentences is filed in a court (a **"Non-Designated Court"**) other than a court located within the Province of Québec (a **"Foreign Action"**) in the name of any securityholder, such securityholder shall be deemed to have consented to (i) the personal jurisdiction of the courts located within the Province of Québec in connection with any action or proceeding brought in any such Non-Designated Court to enforce the preceding sentences and (ii) having service of process made upon such securityholder in any such action or proceeding by service upon such securityholder's counsel in the Foreign Action as agent for such securityholder. This Article 11 shall not apply to suits brought to enforce a duty or liability created by the U.S. Securities Act of 1933, as amended (the **"Securities Act"**), or the U.S. Securities Exchange Act of 1934, as amended, or any other claim for which the federal courts of the United States of America have exclusive jurisdiction. Unless the Company consents in writing to the selection of an alternative forum, to the fullest extent permitted by law, the federal district courts of the United States of America shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act. Any person or entity holding, owning or otherwise acquiring any interest in any security of the the Corporation shall be deemed to have notice of and consented to the provisions of this Article 11.

ARTICLE 12 MISCELLANEOUS

12.1 Notices.

Any notice, document or other information required to be provided by the Corporation to any director, officer, shareholder or auditor is sufficiently provided if delivered to the person's Recorded Address, if mailed to the person's Recorded Address by prepaid mail, or if otherwise provided by electronic means in accordance with the Act.

12.2 Notice to Joint Holders.

Subject to applicable securities laws, if two or more persons are registered as joint holders of any shares, any notice or other document relating to such shares may be addressed to all such joint holders but notice addressed to one of them constitutes sufficient notice and delivery to all of them.

12.3 Electronic Documents.

A requirement under this by-law that a notice, document or other information be provided in writing may be satisfied by providing an electronic document and a requirement under this by-law for a signature or that a document be executed, in relation to an electronic document, may be satisfied, in each case, if the requirements in the Act, applicable securities laws or any other applicable law in respect thereof are met.

12.4 Persons Entitled by Operation of Law.

Every person who becomes entitled to any share by operation of law, transfer, death of a shareholder or any other means, is bound by every notice in respect of such share that has been given to the shareholder from whom the person derives title to such share before such person's name and address is entered on the securities register (whether the notice was given before or after the happening of the event on which such person became so entitled) and before such person furnished the Corporation with the proof of authority or evidence of such person's entitlement. Computation of Time Periods.

Except if otherwise provided in the Act, in computing the date when notice of any event must be given if a specified number of days is required, (i) the date of giving the notice is excluded and the date of the event is included, (ii) non-judicial days within the meaning of the *Code of Civil Procedure* are counted; but when the last day is a non-judicial day, the time limit is extended to the next following judicial day and (iii) Saturday is considered a non-judicial day.

This by-law was made by resolution of the Board and ratified by ordinary resolution of the shareholders on June 10, 2020.

June 17, 2020

Repare Therapeutics Inc.
7210 Frederick-Banting Street, Suite 100
Saint-Laurent, Québec
H4S 2A1

Dear Sirs/Mesdames:

Re: Repare Therapeutics Inc. - Registration Statement on Form S-1

We have acted as Canadian counsel to Repare Therapeutics Inc. (the “**Corporation**”), a corporation governed on the date of this opinion by the *Canada Business Corporations Act*, in connection with the registration of 10,000,000 common shares of the Corporation (and up to an additional 1,500,000 common shares of the Corporation issuable upon exercise of an option granted by the Corporation to purchase additional common shares of the Corporation) (collectively, the “**Shares**”) pursuant to a Registration Statement on Form S-1 (the “**Registration Statement**”) filed on June 17, 2020 with the Securities and Exchange Commission (the “**SEC**”) under the Securities Act of 1933, as amended (the “**Securities Act**”), relating to the registration of the Shares to be issued by the Corporation pursuant to an underwriting agreement (the “**Underwriting Agreement**”) to be entered into among the Corporation, Morgan Stanley & Co. LLC, Goldman Sachs & Co. LLC, Cowen and Company, LLC and Piper Sandler & Co.

We have examined the Registration Statement and all such corporate and public records, statutes and regulations and have made such investigations and have reviewed such other documents as we have deemed relevant and necessary and have considered such questions of law as we have considered relevant and necessary in order to give the opinion hereinafter set forth. As to various questions of fact material to such opinions which were not independently established, we have relied upon a certificate of an officer of the Corporation.

In reviewing the foregoing documents and in giving this opinion, we have assumed the legal capacity of all individuals, the genuineness of all signatures, the veracity of the information contained therein, the authenticity of all documents submitted to us as originals and the conformity to authentic or original documents of all documents submitted to us as certified, conformed, electronic, photostatic or facsimile copies.

We are qualified to practice law in the Province of Québec and this opinion is rendered solely with respect to the Province of Québec and the federal laws of Canada applicable in the Province of Québec. This opinion is expressed with respect to the laws in effect on the date of this opinion and we do not accept any responsibility to take into account or inform the addressee, or any other person authorized to rely on this opinion, of any changes in law, facts or other developments subsequent to this date that do or may affect the opinion we express.

Based upon and subject to the foregoing, and subject to the qualifications, assumptions and limitations stated herein, we are of the opinion that, when the Shares shall have been issued and sold pursuant to the terms of the Underwriting Agreement, the Shares will be validly issued, fully paid and non-assessable.

Where this opinion refers to any of the Shares as being issued as being “fully paid and non-assessable”, such opinion assumes that all required consideration (in whatever form) has been paid or provided.

We hereby consent to the reference to us under the heading “Legal Matters” in the Registration Statement and to the filing of this opinion as an exhibit to the Registration Statement. This opinion may not be quoted from or referred to in any documents other than the Registration Statement as provided for herein without our prior written consent.

Yours very truly,

/s/ Stikeman Elliott LLP

Stikeman Elliott LLP

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption “Experts” and to the use of our report dated April 3, 2020 (except for Note 19(b), as to which the date is June 15, 2020) in Amendment No. 2 to the Registration Statement (Form S-1 No. 333-238822) and related Prospectus of Repare Therapeutics Inc. for the registration of its common shares.

/s/ Ernst & Young LLP¹

Montreal, Canada

June 17, 2020

¹ CPA auditor, CA, public accountancy permit no. A113209