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

March 4, 2020

Statement of Management Responsibility

The following "Summary Financial Information and Management's Discussion and Analysis of Financial Condition and Results of Operations" ("MD&A") for the three-month periods ended January 31, 2020 and January 31, 2019 was prepared by management of Avivagen Inc. ("Avivagen" or the "Corporation") and approved by the Board of Directors on March 4, 2020.

Management is responsible for ensuring that processes are in place to provide sufficient knowledge to support the representations made in these filings. The Audit Committee and Board of Directors provide an oversight role with respect to all public financial disclosures by the Corporation, and have reviewed this MD&A and the accompanying unaudited financial statements.

The Chief Executive Officer (the "CEO"), and the Chief Financial Officer (the "CFO"), in accordance with National Instrument 52-109, have both certified that they have reviewed the unaudited interim financial statements and this MD&A (the "filings") and that, based on their knowledge having exercised reasonable diligence, that (a) the filings do not contain any untrue statement of a material fact or omit to state a material fact required to be stated or that is necessary to make a statement not misleading in light of the circumstances under which it was made, with respect to the period covered by the filings; and (b) the financial statements together with the other financial information included in the filings fairly present in all material respects the financial condition, financial performance and cash flows of the Corporation, as of the date of and for the period presented in the filings.

Investors should be aware that inherent limitations on the ability of certifying officers of a venture issuer to design and implement, on a cost-effective basis, the disclosure controls and procedures and internal control over financial reporting as defined in NI 52-109 will result in additional risks to the quality, reliability, transparency and timeliness of interim filings, annual filings, and other reports provided under securities legislation.

In contrast to the certification required for non-venture issuers under National Instrument 52-109 *Certification of Disclosure in Issuers' Annual and Interim Filings* (NI 52-109), the Corporation does not include representations relating to the establishment and maintenance of disclosure controls and procedures and internal control over financial reporting, as defined in NI 52-109. In particular, the CEO and CFO filing this MD&A are not making any representations relating to the establishment and maintenance of:

i) Controls and other procedures designed to provide reasonable assurance that information required to be disclosed by the Corporation in its filings or other reports filed or submitted under securities legislation is recorded, processed, summarized and/or reported within the time periods specified in securities legislation; and

ii) A process to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with the issuer's International Financial Reporting Standards ("IFRS") reporting.

This MD&A discusses material changes in the Corporation's financial condition, results of operations and cash flows for the three-month period ended January 31, 2020. Such discussion and comments on liquidity and capital resources should be read in conjunction with the financial statements dated January 31, 2020 and related notes which have been prepared in accordance with IFRS. The reader should also refer to the Corporation's Annual Information Form dated February 1, 2019, Risk Factor section (the "AIF Risk Factors"), which risk factors are incorporated herein by reference. To the extent there is any conflict between the AIF Risk Factors and risks identified in this MD&A, the risks identified in this MD&A will govern.

This discussion and the comments contained hereunder include both historical information and forward-looking information. Statements including expressions such as "anticipate", "believe", "estimate", "expect", "foresee", "intend", "plan", "will", and similar expressions are forward-looking statements. The forward-looking statements are not historical facts but reflect the Corporation's current assumptions and expectations regarding future events. The forward-looking information, which is generally information stated to be anticipated, expected, or projected by the Corporation, involves known and unknown risks, uncertainties and other factors that may cause the actual results and performance of the Corporation to be materially different from any future results and performance expressed or implied by such forward-looking information. Forward-looking statements in this MD&A include, without limitation, statements about the Corporation's expectations with respect to future orders of its OxC-beta™ Livestock product, revenues, expenses, assets, and liabilities; whether UNAHCO, Inc. ("UNAHCO") will scale up the commercial roll out of OxC-beta™ Livestock by purchasing a recurring, monthly or quarterly supply for use in swine; whether UNAHCO will continue making purchases from Avivagen or increase its level of purchases; the Corporation's intention to pursue additional funds through long-term debt or equity financings; the Corporation's expectations with respect to future R&D expenditures; the ability of the Corporation's products to reduce the development of antibiotic resistant pathogens that are widely thought to occur as a result of food animal production and can threaten human health or to replace antibiotics in food-animal applications; the Corporation's long term goals and expectations with respect to its products and the application thereof; the Corporation's planned efforts with respect to regulatory approval in additional jurisdictions and the funding required for such processes; the Corporation's plans to expand into additional geographic markets; the ability of the Corporation and its products to access the human supplement, prophylactic or therapeutic markets; anticipated effects or outcomes of commercial agreements entered into by the Corporation; the Corporation's expectations with respect to total global animal feed production in target species of poultry, swine and cattle to which OxC-beta™ Livestock could be added; and the expected impacts on the Corporation of future IFRS accounting pronouncements. In addition to the AIF Risk Factors, potential risks and uncertainties include, without limitation, the uncertainties inherent in the early revenue stage of the Corporation and the development of biotechnology products for use in animals and humans; the ability to continue as a going concern; the need for significant additional funding; extensive government regulation of the Corporation's products; the ability of the Corporation to obtain third-party regulatory support; the success of Corporation-sponsored and customer-sponsored product trials; the ability of the Corporation to obtain and enforce patent protection; the risk of product liability claims and product recalls; the Corporation's sensitivity to unfavourable publicity and consumer perception; the political and legal risk associated with the Corporation's major markets being located outside of Canada; the Corporation's dependence on international advisors and consultants; the volatility of the Corporation's share price; the Corporation's susceptibility to global economic stress; rapid developments in technology and acquisition of future technology, including developments by competitors; the introduction of products to market; protection of intellectual property; dependence on key employees; dependence on partners for development, regulatory and commercial advancement of products; significant portions of revenue from a single client; reliance on a sole source for manufacturing; and reliance on third parties for marketing and distribution of products.

The Corporation and its suppliers, partners and customers are exposed to potential interruption and damage, and partial or full loss, resulting from environmental disasters and other catastrophic events. There can be no assurance that in the event of an earthquake, hurricane, tornado, fire, flood, ice storm, tsunami, typhoon, terrorist attack, cyber-attack, act of war or other natural, manmade or technical catastrophe, all or some parts of the operations of the Corporation or its suppliers, partners or customers will not be disrupted. The occurrence of a significant event which disrupts the ability of the Corporation or its suppliers or partners to produce or sell the Corporation's products for an extended period, including events which reduce customer demand for the Corporation's products, could have a material negative impact on the Corporation's business.

Climate change is predicted to lead to increased frequency and intensity of weather events and related impacts such as storms, wildfires, flooding and storm surge. Extreme weather events create a risk of physical damage to the operations of the Corporation or its suppliers, partners and customers which may not be recoverable through insurance, legal, regulatory cost recovery or other processes and could materially affect the Corporation's business, results of operations and cash flows, including its reputation with customers, regulators, governments and financial markets.

An outbreak of infectious disease, a pandemic or a similar public health threat, such as the recent outbreak of the novel coronavirus known as COVID-19, or a fear of any of the foregoing, could adversely impact the Corporation by causing operating, supply chain and project development delays and disruptions, labour shortages, reduced product demand, travel and shipping disruption and shutdowns (including as a result of government regulation and prevention measures), and increased costs to the Corporation.

Corporation Overview

Avivagen is domiciled in Canada and is located at 100 Sussex Drive, Ottawa, Ontario, Canada K1A 0R6. The Corporation is a life-sciences company that is developing and commercializing products that help support animal health, including antibiotic alternatives in livestock feeds. Avivagen has discovered the actual molecular source of β-carotene's overlooked, previously difficult-to-reproduce capability to support an animal's own health defences by helping support the health and growth of the animal. The Corporation's unique proprietary technology, known as OxC-beta™ (fully-oxidized beta-carotene) Technology, is based on Avivagen's utilization of the propensity of the β-carotene micronutrient to naturally undergo oxidation to generate a mixture of polymeric and flavour-enhancing breakdown oxidation products. This previously unrecognized class of polymeric compounds, together with the breakdown products, possess a unique combination of health benefits that together are able to account for β-carotene's activity beyond being just a source of vitamin A.

Avivagen has further discovered that the health benefits of the OxC-beta™ Technology afford the Corporation the opportunity to provide its lead product, OxC-beta™ Livestock, as an entirely new and novel, non-drug alternative product for in-feed antibiotics for livestock that are used widely for growth promotion and disease prevention. The use of antibiotics as growth promoters in the feedstock of cattle, swine and poultry has been banned for over 10 years in Europe and their use has more recently become a source of urgent concern to health authorities, governments and consumers, leading them to demand changes now being supported by leading international food processors, retailers and restaurant chains. OxC-beta™ Livestock product has completed multiple trials as a non-antibiotic feed additive that successfully helps optimize health and productivity in swine and poultry. By enabling the removal of antibiotics from feeds, the OxC-beta™ Livestock product is expected to help reduce the development of antibiotic resistant pathogens that are widely thought to occur as a result of antibiotic use in food animal production and can threaten human health.

The benefits observed in livestock have given rise to one of Avivagen's longer-term goals, which is to access the human supplement, markets for OxC-beta™ Technology.

A major milestone for the Corporation was the publication in April 2016 in the American Chemical Society's Journal of Agricultural and Food Chemistry of a peer-reviewed scientific publication "Discovery and Characterization of Carotenoid-Oxygen Copolymers in Fruits and Vegetables with Potential Health Benefits". The paper reported the important discovery that counterparts of fully oxidized beta carotene ("OxBC"), containing the β-carotene-oxygen copolymer component of OxC-beta™ Livestock, occur naturally in a variety of foods at levels that are expected to beneficially affect health. This new knowledge is of major importance to the Corporation in gaining regulatory acceptance throughout the world for the use of the Corporation's OxC-beta™ Technology in animals and humans. The discovery also has provided the Corporation with the opportunity to expand its patent portfolio by filing for intellectual property protection for the natural forms and counterparts of OxBC.

The Corporation believes that OxC-beta™ Livestock in its food-animal applications has the potential, by supporting the animals' own immune system, to replace antibiotics used for growth promotion: field trials have established that it helps maintain optimal health and, in this regard, thereby provides similar benefits to in-feed antibiotics. The Corporation is pursuing additional sales of OxC-beta™ Livestock in species such as poultry and swine where data can be rapidly generated and in jurisdictions with high motivation to eliminate the use of antibiotics and/or that have lower regulatory hurdles for products of this nature. In pursuit of such sales, the Corporation has conducted confirmatory trials with major Asian livestock integrators and exploratory trials with qualified universities or research institutes. Identities of some trial collaborators and certain summary trial results have been disclosed in Avivagen's news releases.

For the fiscal year ended October 31, 2018, the Corporation delivered a total of 6,000kg of OxC-beta™ Livestock 10% premix to UNAHCO, Inc. and 100kg of OxC-Beta™ Livestock to Thailand.

For the fiscal year ended October 31, 2019, the Corporation delivered 6,000kg of OxC-beta™ Livestock 10% premix to UNAHCO, Inc. and 400kg to clients in Thailand, Taiwan, and China.

For the three months ended January 31, 2020, the Corporation delivered 2,100kg of OxC-beta™ Livestock 10% premix to UNAHCO, Inc. and 75kg to clients in Thailand.

In February 2019, the Corporation signed a sales and distribution agreement with CSA Animal Nutrition ("CSA"), an entity based in the United States. The agreement grants an exclusive right to CSA to distribute and sell OxC-beta™ Livestock for swine, poultry, and dairy cattle within the United States. As an independent US firm, CSA has the flexibility and technical expertise to reach a variety of customers across numerous species, from integrated commercial livestock and poultry production companies and young animal product manufacturers to premix blenders, thereby enhancing the potential adoption, promotion and sale of OxC-beta™ Livestock. The agreement sets out minimum performance targets required for CSA to maintain exclusivity.

In February 2020, the Corporation signed a sales and distribution agreement with INPHILCO, Inc., a corporation in the Philippines. This agreement does not replace the current and ongoing relationship Avivagen has with UNAHCO, Inc.

The Corporation believes that the total global animal feed production in Avivagen's target species of poultry, swine and cattle to which OxC-beta™ Livestock could be added is approximately 1 billion tons[1]. Asia, the Corporation's target market for initial commercialization, is the largest single region representing some 35% of total world animal feed consumption.

In all major markets in which the Corporation plans commercial operations there is a regulatory requirement prior to offering OxC-beta™ Livestock for sale. There is very little consistency, other than proof of efficacy and safety, for regulatory filings among countries, which necessitates the Corporation to custom prepare a registration dossier for each market that it wishes to enter. The filing of the registration dossiers could involve various studies and trials, which entail various costs.

The review time before regulators confirm no objection to sale can range from one to several years, depending on the country and registration process required. Due to the uncertain nature, extent and timing of the regulatory process in each country, there is no guarantee that the Corporation can register in all countries within the time frames projected.

Avivagen has, as of the date of this report, received approval for sale of OxC-beta™ Livestock for major livestock species, including poultry, swine, and cattle where appropriate, in New Zealand, the Philippines, Malaysia, Mexico, Australia, Taiwan, and Thailand.

Avivagen self-affirmed GRAS status for OxC-beta™ Livestock, which permits sales of the product in the U.S. This action by Avivagen is based on the positive opinion of a panel of independent experts assembled to evaluate the safety and efficacy of OxC-beta™ Livestock.

Self-affirmation of GRAS provides federal level approval for sale of OxC-beta Livestock. However, many individual states require an AAFCO (American Association of Feed Control Officials) definition for OxC-beta Livestock for sales within the particular states. Application for an AAFCO definition is in progress.

Registration activity is ongoing in several Asian countries, such as South Korea, China, Vietnam, and Indonesia, as this area of the world has been in the forefront in reducing antibiotic use in food animals and has a high demand for livestock production. A number of these Asian countries export poultry and pork to countries in the European Union, which has a policy of no antibiotics in food animals.

Regulatory approvals in China, Canada, and Latin America continue to be priorities for Avivagen. To help guide the Corporation through the regulatory process, several regulatory consultants have been engaged. Consultants have been engaged for the Chinese, Brazilian, and Canadian markets. The regulatory requirements for OxC-beta™ Livestock in China are being addressed through partnerships with a Chinese company which will be coordinating the submission on behalf of the Corporation. The anticipated approval time for China is approximately two years. Regulatory activities are underway in other markets, including Brazil and Canada, with a time frame from less than one to several years.

The timing and cost of regulatory registration can be very significant, and the Corporation anticipates requiring additional funds to support the above regulatory registration process. The Corporation will attempt to supplement the cost from sales in the countries for which it is registered to date, but additional funding by way of equity and or debt will be required.

For companion animals, the Corporation has created a branded line of OxC-beta™ Technology product, Vivamune™ Chews, intended to improve or maintain quality of life in companion animals. This product is in a class of non-drug nutritional supplements for the United States, which are regulated by the United States National Animal Supplement Council (NASC).

On June 13, 2019, the Corporation announced a Joint Venture agreement with Mimi's Rock Corp. for the companion animal market. Under the terms of the agreement, Avivagen will supply its products that include its proprietary OxC-beta™ technology and Mimi's Rock Corp. will market and sell the product through its e-commerce platform and online global channels. This joint venture will be the exclusive channel through which Avivagen sells nutritional supplements for cats and dogs online. All sales will be conducted through a newly formed corporation jointly owned by the Corporation and Mimi's Rock Corp. The profits will be shared equally between the two companies.

In July 2018, the Corporation received regulatory approval for fully oxidized beta carotene, which will allow marketing and selling in Canada of Vivamune and other companion animals products containing OxC-beta™ Technology.

Liquidity, Capital Resources, Outlook, and Going Concern

The Corporation is an early-revenue stage corporation and accordingly has not generated significant revenue from its principal products. The Corporation has incurred significant accumulated deficit to date of $(31,826,156) (October 31, 2019: $(31,012,699)). The ability of the Corporation to continue operations is dependent upon obtaining sufficient funding to sustain operations through the early-revenue stage, successfully bring technologies to market and achieve profitable operations. The Corporation manages its capital, which consists of cash provided from financing and long-term debt, with the primary objective being safeguarding sufficient working capital to sustain operations. The Board of Directors has not established capital benchmarks or other targets.

As at January 31, 2020, the Corporation had cash and cash equivalents of $2,679,002 (October 31, 2019: $1,085,945).

The Corporation will need to obtain additional financial resources through revenues, operations, additional equity and/or debt financing or by selling products or licensing technology for cash proceeds.

The Corporation may raise capital through the issuance of additional equity or debt financing. The Corporation's short-term plans are dependent on its ability to access funding to continue operations and development of the principal products. If the Corporation is unable to obtain funding through the issuance of common shares, warrants or stock options exercised, issuance of debt, proceeds from product sales and/or a licensing arrangement in a timely manner, then these programs and operations in general could be delayed or cease altogether. The Corporation will pursue additional funding to offset portions of the selling, general, and administration cost, and research costs. The Corporation expects expenditures for regulatory approvals (including research expenditures on trials and efficacy studies in support of registration) to continue or increase for the foreseeable future. As the Corporation moves further into the commercialization and revenue phase, these registration and research expenditures may ultimately begin to decrease.

Continued uncertainty in the financial and business markets may impact the Corporation's ability to raise additional financing proceeds and it may impact the terms and conditions related to any financing.

The Corporation's ultimate success depends on its ability to bring technology and resulting products to market. Regulation by government is a significant factor in the registration, research, development, manufacture, and marketing of the Corporation's products.

Most of the Corporation's OxC-beta™ Technology applications require regulatory approval before they can be commercialized. Animal feed products, such as OxC-beta™ Livestock, can take many years to receive regulatory approvals in many countries and face a significant degree of uncertainty of receiving approval and subsequent market success. With New Zealand, Australia, Taiwan, Thailand, Mexico, Malaysia, and the Philippines approved for distribution for major livestock species as of the date of this report and self-affirmed GRAS status in the US, the Corporation is actively working to gain approval in other Asian jurisdictions such as South Korea, China, Vietnam, and Indonesia. The Corporation's self-affirmed GRAS status allows the product to be sold in the USA. In concert with this strategy, the Corporation recently retained consultants whose primary focus is to help expedite the approval process within Canada and Brazil. Other applications for OxC-beta™ Technology, such as pet supplements, may require less data for regulatory approval but need marketing resources and an effective marketing campaign to attain commercial success.

Given the uncertainty, extensive time, and financial expenditures involved in moving the products based on OxC-beta™ Technology through the regulatory process from development to market, the Corporation may never be able to successfully develop commercially-viable products. If the Corporation is unable to do so, its business, financial condition, and results of operations would be materially adversely affected. At this time, while the Corporation has demonstrated its ability to raise equity capital and long-term debt, there can be no assurance that further financing would be available to the Corporation when needed, on commercially reasonable terms, or at all. In the absence of an ability to raise sufficient additional funds there is significant doubt regarding the Corporation's ability to continue. In addition, any equity financing will involve substantial dilution to the Corporation's existing shareholders.

The Corporation has not obtained profitable operations to date. For the three-month period ended January 31, 2020, the Corporation had a net loss from all operations of $(1,331,780) (three months ended January 31, 2019: $(1,141,797)). Whether and when the Corporation can attain profitability and positive cash flow is uncertain. The accumulated deficit is $(31,826,156) as of January 31, 2020 (October 31, 2019: $(31,012,699)). These circumstances cast significant doubt as to the ability of the Corporation to meet its obligations as they come due, and accordingly, the ultimate appropriateness of the use of accounting principles applicable to a going concern. Management is actively pursuing the commercialization of its products and is continuously evaluating the availability of additional debt or equity financing to provide adequate cash resources to carry out its business objectives, and was successful in raising additional equity and debt financing in the current and prior fiscal years. Nevertheless, there is no assurance that these ongoing initiatives will continue to be successful.

The Corporation's ability to continue as a going concern is dependent upon the Corporation's ability to obtain the ongoing support of its lenders and investors, obtain profitable operations, generate significant sales and/or raise additional capital. These financial statements do not reflect adjustments in the carrying values of assets and liabilities, the reported revenues and expenses, and the balance sheet classifications used that would be necessary if the Corporation were unable to realize its assets and settle its liabilities as a going concern in the normal course of operations. Such adjustments could be material.

Financial Position of the Corporation
Selected Balance Sheet Data

		As at January 31, 2020		As at October 31, 2019
Cash and cash equivalents	$	2,679,002	$	1,085,945
Total assets	$	3,959,177	$	1,887,679
Current liabilities	$	1,605,130	$	1,301,890
Non-current portion of Atlantic Canada Opportunities Agency long-term liabilities	$	267,472	$	237,292
Non-current portion of long-term debt	$	3,712,815	$	3,604,712
Total liabilities	$	5,725,180	$	5,143,894
Total shareholders' equity (deficiency)	$	(1,766,003)	$	(3,256,215)

Atlantic Canada Opportunities Agency Agreements

The Corporation entered into two agreements to obtain repayable funding from the Atlantic Canada Opportunities Agency ("ACOA"). Under the first agreement, which was dated August 15, 2006, the Corporation drew $2,052,131 of which $32,498 was repaid for a remaining obligation of $2,019,633. Under the second agreement, which was dated March 24, 2010, the Corporation drew $1,334,400 of which $117,278 was repaid for a remaining obligation of $1,227,122.

The ACOA loans were initially recognized at their fair value, and are subsequently carried at amortized cost as determined by using a discounted cash flow analysis, which requires a number of assumptions. The significant assumptions used in determining the fair value using discounted cash flows include estimating the amount and timing of future revenue for the Corporation and the discount rate. As the loans are repayable based on a percentage of gross revenue, the determination of the amount and timing of future revenue significantly impacts the initial fair value of the loan, as well as the carrying value of the loans at each reporting date. Management recalculates the carrying amount by computing the present value of the estimated future cash flows at the original effective interest rate of 35%. Any adjustments are recognized in the consolidated statement of total comprehensive loss as accreted interest after initial recognition.

The Corporation commenced repayment on June 30, 2014. Yearly repayments are capped at 10% of product revenues of the prior year from the resulting product. The next ACOA repayment is due on 30 June 2020 and is currently recorded as $97,745 based on OxC-beta product sales of $977,451 in the twelve-month period ended October 31, 2019.

Bloom Burton Healthcare Lending Trust Credit Facility

On October 30, 2015, the Corporation entered into an agreement with the Bloom Burton Healthcare Lending Trust (the "Trust") for a secured drawdown credit facility of $1.8 million. Amounts drawn on the credit facility accrue interest at 12% annually, with 7% repayable each calendar quarter and the remaining 5% accruing to be repaid at maturity.

In consideration for the credit facility, the Trust has been issued 500,000 warrants to purchase common shares of the Corporation which expired on November 13, 2019.

On November 13, 2015, the Corporation drew $1,000,000 and vested 277,778 warrants. On May 17, 2018, the Corporation drew $800,000 from the facility and vested 222,222 warrants. Under IAS 32 *Financial Instruments*, an entity is required to separate a financial instrument that contains a financial liability and an equity component using the residual method. The warrants are considered to be an equity component and the credit facility is considered a financial liability. Therefore, the financial liability is measured at the discount rate that a market participant would require without the equity component. The discount rate was determined to be 16%. Accordingly, when the credit facility was drawn, the financial liability was recorded at its discounted value of 16% with the difference, being the warrants, accounted for as an equity transaction. The warrants were charged to the contributed surplus account until they expired.

Initial recognition of the facility was at its fair value at a discount rate of 16%. Subsequent recognition uses the effective interest method. Transaction and legal costs associated with the facility in the amount of $99,023 have been recorded to equity and long-term debt on a pro-rata basis. The liability's transaction costs were expensed using the effective interest method up to the date the facility was repaid.

On March 28, 2019, the Corporation fully repaid the $1.8 million principal of the credit facility and $234,929 in accrued interest.

Senior Secured Debentures

On March 28, 2019, the Corporation closed an offering of Senior Secured Debentures (the "First Closing Debentures") in the aggregate principal amount of $5,264,000 for gross proceeds in the same amount. A second closing of Senior Secured Debentures (the "Second Closing Debentures" and together with the First Closing Debentures the "Debentures")) took place on April 9, 2019 in the aggregate principal amount of $114,000 for gross proceeds in the same amount. The Debentures bear interest at 10% per year, payable quarterly in cash. The Corporation will also pay an annual credit maintenance fee of 2% (in cash or shares at the Corporation's discretion). The First Closing Debentures will mature on March 27, 2022 and the Second Closing Debentures will mature on April 8, 2022, at which time the principal amount and all accrued and unpaid interest will be repayable in cash.

Purchasers of First Closing Debentures also received an aggregate of 1,316,000 common shares of the Corporation, being an amount equal to 20% of the principal amount of the First Closing Debentures divided by $0.80 per share.

The principal amount of the First Closing Debentures and any accrued and unpaid interest may be repaid in full after March 28, 2020. Between March 28, 2020 and March 28, 2021 an early repayment is subject to a 2% fee and between March 28, 2021 and March 27, 2022 an early repayment is subject to a 1% fee. The early repayment fee may be paid in cash or shares at the Corporation's discretion.

The Corporation paid agent fees in connection with the First Closing Debentures of $180,300 and issued 225,375 agent warrants. Each agent warrant entitles the agent to purchase one common share of the Corporation for two years at $0.80. The warrants were recognized at a fair value of $72,796 using a Black-Scholes-Merton calculation with the following inputs: stock price of $0.74, exercise price of $0.80, life of 2 years, annual risk-free interest rate of 1.49% based on the Bank of Canada benchmark 2-year bond yield, and annualized volatility of 85%. The warrants were charged to the contributed surplus account until such time as the warrants are exercised or expired.

Under IAS 32 *Financial Instruments: Presentation*, an entity is required to separate a financial instrument that contains a financial liability and an equity component using the residual method. The common shares are considered to be an equity component and the First Closing Debentures are considered a financial liability. Therefore, the financial liability is measured at the discount rate that a market participant would require without the equity component. Initial recognition of the debt component of the First Closing Debentures was at its fair value at a discount rate of 20.8%. $4,211,200 was recognized as debt and $1,052,800 was recognized as equity. Subsequent recognition of the debt component will use the effective interest method at a rate of 23.6% to also account for transaction costs allocated on a pro-rata basis to the debt portion of the First Closing.

Purchasers of Second Closing Debentures also received an aggregate of 26,206 common shares of the Corporation, being an amount equal to 20% of the principal amount of the Second Closing Debentures divided by $0.87 per share. The principal amount of the Second Closing Debentures and any accrued and unpaid interest may be repaid in full after April 9, 2020. Between April 9, 2020 and April 9, 2021 an early repayment is subject to a 2% fee and between April 9, 2021 and April 8, 2022 an early repayment is subject to a 1% fee. The early repayment fee may be paid in cash or shares at the Corporation's discretion.

The Corporation paid agent fees in connection with the Second Closing Debentures of $6,840 and issued 7,862 agent warrants. Each agent warrant entitles the agent to purchase one common share of the Corporation for two years at $0.87. The warrants were recognized at a fair value of $3,137 using a Black-Scholes-Merton calculation with the following inputs: stock price of $0.87, exercise price of $0.87, life of 2 years, annual risk-free interest rate of 1.60% based on the Bank of Canada benchmark 2-year bond yield, and annualized volatility of 85%. The warrants were charged to the contributed surplus account until such time as the warrants are exercised or expired.

Under IAS 32 *Financial Instruments: Presentation*, an entity is required to separate a financial instrument that contains a financial liability and an equity component using the residual method. The common shares are considered to be an equity component and the Second Closing Debentures are considered a financial liability. Therefore, the financial liability is measured at the discount rate that a market participant would require without the equity component. Initial recognition of the debt component of the Second Closing Debenture was at its fair value at a discount rate of 20.23%. $91,200 was recognized as debt and $22,800 was recognized as equity. Subsequent recognition of the debt component will use the effective interest method to also account for transaction costs allocated on a pro-rata basis to the debt portion of the Second Closing.

Transaction costs associated with the Debentures in the amount of $412,180 have been recorded to equity and long-term debt on a pro-rata basis. The liability's transaction costs will be expensed using the effective interest method up to the maturity date of the Debentures.

The undiscounted future repayments per fiscal year on the loan are as follows:

2020	$	512,382
2021		645,360
2022		5,703,192
Total	**$**	**6,860,934**

Debt Obligations

In addition to the ACOA repayable funding and Senior Secured Debentures, the Corporation's major outstanding obligations include accounts payable and accrued liabilities of $730,627 which are due within the current period, and mostly within 30 days.

The Corporation has approximately $133,637 of unrecognized contractual commitments as at January 31, 2020 (October 31, 2019: $235,000 of unrecognized contractual commitments).

The Corporation also has unrecognized contractual obligations for which future cash commitments cannot be estimated, up to 7% of certain future revenues.

Lease Obligations

The Corporation holds leases for office and laboratory space (collectively the "office leases"). One of the leases has terms expiring in March 2023 and a second has a term expiring in March 2021. Information on leases for which the Corporation is a lessee is presented below:

The Corporation has adopted IFRS 16 *Leases* retrospectively from November 1, 2019 but has not restated comparatives for the October 31, 2019 reporting period, as permitted under the specific transition provisions in the IFRS 16 *Leases* standard. The reclassifications and the adjustments arising from the new leasing rules are therefore recognized in the opening balance sheet on November 1, 2019. The new accounting policies are disclosed within the financial statements in Note 3(N).

Previously, the Corporation determined at contract inception whether an arrangement is or contains a lease under IFRIC 4 *Determining Whether an Arrangement Contains a Lease*. Under IFRS 16 *Leases*, the Corporation assesses whether a contract is or contains a lease based on the definition of a lease.

As a lessee, the Corporation previously classified leases as operating or finance leases based on its assessment of whether the lease transferred significantly all of the risks and rewards incidental to ownership of the underlying asset to the Corporation. Under IFRS 16 *Leases*, the Corporation recognizes right-of-use assets and lease liabilities for most leases – i.e. these leases are on-balance sheet.

The Corporation decided to apply recognition exemptions to short-term leases and leases of low value. For leases of other assets, which were classified as operating under IAS 17 *Leases*, the Corporation recognized right-of-use assets and lease liabilities.

Leases classified as operating leases under IAS 17

As at November 1, 2019, lease liabilities were measured at the present value of the remaining lease payments, discounted at the Corporation's incremental borrowing rate of 8%.

The Corporation used the following practical expedients when applying IFRS 16 *Leases* to leases previously classified as operating leases under IAS 17 *Leases*: excluded initial direct costs from measuring the right-of-use asset at the date of initial application and chose not to restate prior periods.

Impacts on financial statements

On transition to IFRS 16 *Leases* on November 1, 2019, the Corporation recognized $54,912 of right-of-use assets and $43,951 of lease liabilities.

The Corporation discounted the lease payments using its incremental borrowing rate as at November 1, 2019 of 8%.

Operating lease commitments as at October 31, 2019	**$**	**70,167**
Subtract: exemption for short-term leases		(14,100)
Operating lease commitments less exemptions as at October 31, 2019		56,067
Effect of discounting at the incremental borrowing rate of 8%		(1,155)
Discounted lease liability as at November 1, 2019		54,912
Less: deposits and rent prepayments		(11,321)
Lease liability as at November 1, 2019		**43,951**
Add: present value of modification of leases within Q1 2020		251,061
Add: interest accretion during the reporting period		5,649
Subtract: lease payments during the reporting period		(31,717)
Lease liability as at January 31, 2020	**$**	**268,584**

Right-of-use asset as at November 1, 2019 (see above liability before prepayments)	**$**	**54,912**
Add: present value of modification of leases within Q1 2020 (see above)		251,061
Subtract: depreciation charge during the reporting period		(30,075)
Right-of-use asset as at January 31, 2020	**$**	**275,898**

		Right-of-use asset
Right-of-use asset as at October 31, 2019	**$**	**Nil**
Addition to right-of-use assets during the period		305,973
Depreciation charge for the period		(30,075)
Right-of-use asset as at January 31, 2020	**$**	**275,898**

Details on the Corporation's long-term lease liabilities are as follows:

Lease liabilities as at October 31, 2019	**$**	**Nil**
Additions to lease liabilities during the period		305,973
Deposits and rent prepayments		(21,893)
Interest accretion during the period		5,649
Lease payments during the period		(21,145)
Balance as at January 31, 2020	**$**	**268,584**
Current balance		128,821
Non-current balance		139,763
Balance as at January 31, 2020	**$**	**268,584**

As at January 31, 2020		**Lease liability**
Maturity analysis – undiscounted cash flows per fiscal year		
2020	$	96,541
2021		99,010
2022		78,308
2023		25,508
Total undiscounted lease liabilities	**$**	**299,367**

The Corporation is committed under an additional agreement for the rental of office space at a current monthly rate of $2,350 which will expire on April 30, 2020. This operating leases require rental payments over the life of the lease as follows (undiscounted value per fiscal year):

2020	$	7,050
Total	**$**	**7,050**

China JV

On July 24, 2018, the Corporation entered into an agreement to wind up Shaanxi Jintai China-Canada Beta-carotene Oxidation Biological Company, its joint venture in China (the "China JV"). Upon the completion of the wind-up, the Corporation issued $300,000 in common shares, being 500,000 common shares of the Corporation at $0.60 per share, as reimbursement to the China JV partner for expenses incurred.

Consulting Agreement

In July 2018, the Corporation entered into a consulting agreement with the former China JV partner to provide business advice in the China market. Under the terms of the agreement, the consultant will be issued common shares of the Corporation equal in value to $50,000 per year, valued at the closing share price on the date of each anniversary (July 2019 – first anniversary) of the execution of the agreement.

For the fiscal year ended October 31, 2019, the Corporation recognized a $50,000 consulting fee. In settlement of the consulting fee, the Corporation agreed to issue common shares to the consultant. On November 25, 2019, the Corporation issued 80,645 common shares at a price of $0.62 per share in settlement of this fee.

From the three months ended January 31, 2020, the Corporation recorded an accumulated liability of $26,093 as the pro-rated portion of the $50,000 in common shares payable to the consultant in July 2020.

Centre Beach Joint Venture

On June 13, 2019, the Corporation signed a Shareholder's Agreement with Mimi's Rock, Corp. ("MRC") to create a joint venture, Centre Beach, Inc. ("Centre Beach") for the purposes of marketing and selling Vivamune Health Chews or a similar brand through internet sales world-wide. MRC and the Corporation each hold 50% of the outstanding shares of Centre Beach and each occupy 50% of the seats on the Board of Directors of Centre Beach.

Under the terms of the Shareholder's Agreement, the Corporation is responsible for providing Centre Beach with the active ingredient, OxC-Beta, and providing for necessary registrations in various countries. MRC is responsible for the production, marketing, and sale of Vivamune Health Chews (or a similar brand) as well as administration of Centre Beach.

The Corporation and MRC will fund Centre Beach on a pro rata basis (based on shareholdings) of the expenses of Centre Beach through shareholder loans. The amounts of the loans shall be determined by the Board of Directors of Centre Beach on a quarterly basis. All shareholder loans shall rank pari passu with one another in right of repayment.

Since decisions that impact the variable returns require the unanimous consent of both Avivagen and MRC, as each hold 50% of the voting rights, Avivagen and MRC have joint control over the entity on the basis of Board of Directors seats or shareholder voting rights. The entity is a joint venture and equity accounting will be applied under IAS 28 *Investments in Associates and Joint Ventures*. For the three-month period ended January 31, 2020 the Corporation recognized $25,000 in expenses related to the activity of the joint venture and its financial obligation. There was no other significant activity in the joint venture for the three-month period ended January 31, 2020.

Summary of Quarterly Results

	3 Months Ended with year-to-date (YTD)	
	January 31 2020	**YTD Total 2020**
Total Revenue	$247,805	$247,805
Total Comprehensive Loss	$(1,331,780)	$(1,331,780)
Net Loss per Share (Basic and Diluted)	$(0.04)	$(0.04)

	3 Months Ended with year-to-date (YTD)				
	October 31, 2019	**July 31 2019**	**April 30 2019**	**January 31 2019**	**YTD Total 2019**
Total Revenue	$338,858	$12,484	$303,984	$322,125	$977,451
Total Comprehensive Loss	$(1,123,019)	$(1,278,685)	$(1,292,919)	$(1,141,797)	$(4,836,420)
Net Loss per Share (Basic and Diluted)	$(0.03)	$(0.04)	$(0.04)	$(0.03)	$(0.14)

	3 Months Ended with year-to-date (YTD)				
	October 31 2018	**July 31 2018**	**April 30 2018**	**January 31 2018**	**YTD Total 2018**
Total Revenue	$346,284	$364,213	$218,879	$143,196	$1,072,572
Total Comprehensive Loss	$(1,541,137)	$(1,031,779)	$(1,019,555)	$(1,241,588)	$(4,834,059)
Net Loss per Share (Basic and Diluted)	$(0.05)	$(0.03)	$(0.03)	$(0.04)	$(0.15)

Selected Financial Information

	Three months ended January 31, 2020		Three months ended January 31, 2019	
Revenue	$	247,805	$	322,125
Operating expenses[1]	$	1,433,075	$	1,324,959
Total loss	$	1,331,780	$	(1,141,797)
Basic and diluted loss per share	$	(0.04)	$	(0.03)

Note 1: Operating expenses include selling, general, and administration expenses; research expenses; depreciation; and finance cost; as disclosed in the statement of total comprehensive loss.

Results of Operations

Three months ended January 31, 2020 compared to three months ended January 31, 2019

	3 months ended January 31, 2020		3 months ended January 31, 2019		Variance	
Revenues	$	247,805	$	322,125	$	(74,320)
Cost of products sold		146,510		138,963		(7,547)
Gross margin		**101,295**		**183,162**		**(81,867)**
Selling, general and administration		949,766		1,051,957		102,191
Research		172,773		158,289		(14,484)
Depreciation of equipment		1,159		1,159		-
Depreciation of right-of-use assets		30,075		-		(30,075)
Finance cost		279,302		113,554		(165,748)
Total expenses		**1,433,075**		**1,324,959**		**(108,116)**
Total comprehensive loss for the period	**$**	**(1,331,780)**	**$**	**(1,141,797)**	**$**	**(189,983)**

Revenue for the three-month period ended January 31, 2020 totaled $247,805 compared to $322,125 for the three-month period ended January 31, 2019. The difference of $(74,320) is due mainly to decreased proceeds from sales of OxC-beta™ Technology product.

Expenses for the three-month period ended January 31, 2020 totaled $1,433,075 compared to $1,324,959 for the three-month period ended January 31, 2019. The difference of $(108,116) is due mainly to an increase in finance cost for the period related to long-term debt offset by decreased salaries and share-based payment expenses.

Total comprehensive loss for the three-month period ended January 31, 2020 totaled $1,331,780 compared to a total comprehensive loss of $1,141,797 for the three-month period ended January 31, 2019. The difference of $(189,983) is due mainly to increased expenses related to finance cost and decreased product revenues.

The following details the nature of expenses for the three-month periods ended January 31, 2020 and 2019:

	Three months ended January 31, 2020		Three months ended January 31, 2019	
Selling, general, and administrative				
Salary, wages, board fees, and benefits	$	201,064	$	270,412
Professional fees and other		690,238		698,725
Share-based payments		58,464		82,820
Total selling, general, and administrative	**$**	**949,766**	**$**	**1,051,957**
Research				
Salary, wages, and benefits	$	90,060	$	110,311
Professional fees and other		82,673		65,325
Government grant on research expenses		Nil		(17,347)
Total research		**172,773**	**$**	**158,289**

Selling, general, and administration expenses were $949,766 for the three-month period ended January 31, 2020, compared to $1,051,957 for the three-month period ended January 31, 2019.

Selling, general, and administration expenses for the three-month period ended January 31, 2020 were $102,191 lower due to a decrease in share-based payments and salary expenses.

Share-based payments for the three-month period ended January 31, 2020 were $58,464 compared to $82,820 for the three-month period ended January 31, 2019.

Selling, general, and administrative expenses of $949,766 consist mainly of professional fees and salary and wages in support of the business development and registration.

Research costs were $172,773 for the three-month period ended January 31, 2020 compared to $158,289 for the three-month period ended January 31, 2019. Research costs were $14,484 higher due to an increase in trial expenses to support registration.

Finance cost for the three months ended January 31, 2020 and January 31, 2019 consists of the following:

	Three months ended January 31, 2020	Three months ended January 31, 2019
Interest accretion on ACOA repayable funding	$ 30,179	$ 31,114
Interest accretion on BBHLT long-term debt	Nil	76,997
Amortization of transaction costs on BBHLT long-term debt	Nil	5,443
Interest accretion on debenture long-term debt	243,474	Nil
Interest accretion on lease liabilities	5,649	Nil
Total finance cost	**$ 279,302**	**$ 113,554**

Finance cost for the three months ended January 31, 2020 increased by $165,748 compared to the prior three-month period. This is due mainly to interest accretion on the Senior Secured Debentures that were obtained on March 28, 2019 and interest accretion on lease liabilities recognized under IFRS 16.

Comparison of Cash Flows

	3 months ended January 31, 2020	3 months ended January 31, 2019
Cash Flows from (used in) Operating Activities		
Net loss	$ (1,331,780)	$ (1,141,797)
Items not affecting cash and non-cash adjustments:		
Depreciation of equipment	1,159	1,159
Depreciation of right-of-use assets	30,075	-
Share-based compensation	58,464	82,820
Finance cost	279,302	113,554
Net effect of foreign exchange rates on cash	(716)	(42)
Changes in operating working capital items:		
Trade and other accounts receivable	(44,310)	102,014
Prepaid expenses	(165,136)	(30,376)
Inventories	29,078	147,331
Accounts payable and accrued liabilities	174,419	(10,538)
Cash Flows from (used in) Operating Activities	**(969,445)**	**(735,875)**
Cash Flows used in Investing Activities		
Cost to bring equipment into use	(23,334)	-
Cash Flows used in Investing Activities	**(23,334)**	**-**
Cash Flows from (used in) Financing Activities		
Payment of lease liabilities	(43,035)	
Proceeds from issuance of private placement units	3,000,000	-
Share issuance cost	(236,472)	-
Repayment of interest on long-term debt	(135,373)	(34,669)
Cash Flows from (used in) Financing Activities	**2,585,120**	**(34,669)**
Increase (decrease) in cash and cash equivalents during the period	1,592,341	(770,544)
Net effect of exchange rate changes on cash and cash equivalents	716	42
Cash and cash equivalents, beginning of period	1,085,945	2,207,393
Cash and cash equivalents, end of period	**$ 2,679,002**	**$ 1,436,891**

For the three-month period ended January 31, 2020, the net increase in cash of $1,592,341 is the result of $969,445 used in operating activities, consisting mainly of $1,331,780 in losses from operations offset by $(5,949) in changes in working capital and $279,302 in accrued interest. Cash flows from financing activities of $2,585,120 consisted of proceeds of $3,000,000 in the issuance of common shares offset by

$236,472 in private placement costs and $135,373 in interest paid on the Senior Secured Debentures. Investing activities consist of $23,334 in costs to bring equipment into use.

For the three-month period ended January 31, 2019, the net decrease in cash of $770,544 is the result of $735,875 used in operating activities, consisting mainly of $1,141,797 in losses from operations offset by $208,431 in changes in working capital and $113,554 in accrued interest. Cash flows used in financing activities were $34,669 in interest repaid on the Corporation's long-term credit facility. There were no investing activities in the reporting period.

The Corporation may continue efforts to raise funds by way of generating revenues and/or through the issuance of debt, warrants, and/or common shares. As of January 31, 2020, the Corporation has issued 41,487,979 common shares and has 8,709,799 total warrants outstanding. The Corporation has also granted 2,291,062 stock options.

Shareholders' Equity

The authorized share capital of the Corporation consists of unlimited voting common shares.

On November 30, 2017, the Corporation completed a brokered and non-brokered private placement of 4,058,500 units for gross proceeds of $4,058,500. Each unit consisted of one common share and one half common share purchase warrant for a unit price of $1.00. Each whole warrant entitles the holder to acquire one common share of the Corporation at a purchase price of $1.20 for three years. Related parties participated in the financing in the amount of $510,000.

Based on the gross proceeds of $4,058,500, the relative fair value of the common shares was $3,202,305 and the investor warrants were assigned a relative fair value of $856,195. The Corporation paid agent fees in connection with the transaction in the amount of $286,330 and issued 283,080 agent warrants. These were based on a payment of 8% of the brokered proceeds. The agent warrants were assigned a fair value of $154,278 based on a Black-Scholes calculation with the assumptions indicated below. Each agent warrant entitles the finder to purchase one common share of the Corporation for three years at $1.00. Legal transaction fees for the private placement were $93,387. TSX.V and other filing fees were $20,438.

The Black-Scholes-Merton calculation was based on the following assumptions: a stock price of $0.95; exercise price for investor warrants $1.20, for finder warrants $1.00; time to maturity of 3 years; annual risk-free interest rate of 1.48% based on Bank of Canada 3-year benchmark bond yield; and historical 3-year stock volatility of 92%.

On May 8, 2018, the Corporation settled a $165,000 management bonus payable by issuing 107,944 common shares at a deemed price of $0.80 per share and the remittance of certain amounts in statutory deductions to the Canada Revenue Agency on behalf of the employee.

On March 28, 2019, the Corporation issued 1,316,000 common shares of the Corporation in connection with a private placement of Senior Secured Debentures.

On April 9, 2019, the Corporation issued 26,206 common shares of the Corporation in connection with a private placement of Senior Secured Debentures.

On January 2, 2020, the Corporation completed a non-brokered private placement, issuing 2,500,000 investor units at an issue price of $0.50 per unit for aggregate gross proceeds of $1,250,000. Each investor unit consisted of one common share and one-half of one common share purchase warrant. Each whole warrant entitles the holder to acquire one common share of the Corporation at $0.75 for a period of three years.

In connection with the private placement, the Corporation paid cash finder's fees of $100,000 and issued 200,000 compensation finder's warrants. The finder's warrants were assigned a fair value of $83,100 based on a Black-Scholes-Merton calculation with the following assumptions: share price of $0.58, exercise price of $0.50 for the overlying warrants and $0.75 for the underlying warrants, time to maturity of 2 years, annual risk-free interest rate of 1.66% based on Canada two-year benchmark bond yield, and a historical 2-year stock volatility of 87.7%. Each finder's warrant (or the overlying warrant) entitles the holder to purchase one finder unit at $0.50 per finder unit for a period of 2 years. Each finder unit issuable on exercise of the finder's warrants consists of one common share and one-half common share purchase warrant (or the underlying warrant). Each whole warrant underlying the finder units will be exercisable at $0.75 only during the period ending 2 years from January 2, 2020.

On January 27, 2020, the Corporation completed a non-brokered private placement, issuing 3,500,000 investor units at an issue price of $0.50 per unit for aggregate gross proceeds of $1,750,000. Each investor unit consisted of one common share and one-half of one common share purchase warrant. Each whole warrant entitles the holder to acquire one common share of the Corporation at $0.75 for a period of three years.

In connection with the private placement, the Corporation paid cash finder's fees of $94,620 and issued 189,240 compensation finder's warrants. The finder's warrants were assigned a fair value of $73,709 based on a Black-Scholes-Merton calculation with the following assumptions: share price of $0.56, exercise price of $0.50 for the overlying warrants and $0.75 for the underlying warrants, time to maturity of 2 years, annual risk-free interest rate of 1.44% based on Canada two-year benchmark bond yield, and a historical 2-year stock volatility of 86.9%. Each finder's warrant (or the overlying warrant) entitles the holder to purchase one finder unit at $0.50 per finder unit for a period of 2 years. Each finder unit issuable on exercise of the finder's warrants consists of one common share and one-half common share purchase warrant (or the underlying warrant). Each whole warrant underlying the finder units will be exercisable at $0.75 only during the period ending 2 years from January 27, 2020.

The Corporation incurred transaction costs in connection with the January 2, 2020 and January 27, 2020 private placements of $41,852.

Two related parties to the Corporation participated in the placement for a total of $54,750.

Summary of Outstanding Shares and Dilutive Instruments

As of January 31, 2020 and March 4, 2020, the Corporation had 41,487,979 common shares outstanding and 7,804,242 investor warrants and 905,557 agent warrants for a total of 8,709,799 warrants issued.

Date of Issue	Subscriber Warrants	Agent Warrants	Term (Years)	Date of Expiry	Exercise Price	
1-Jun-2016	2,774,992		3.8	31-Mar-2020[1]	$	0.90
30-Nov-2017	2,029,250		3.0	30-Nov-2020	$	1.20
30-Nov-2017		283,080	3.0	30-Nov-2020	$	1.00
28-Mar-2019		225,375	2.0	28-Mar-2021	$	0.80
9-Apr-2019		7,862	2.0	9-Apr-2021	$	0.87
2-Jan-2020	1,250,000		3.0	2-Jan-2023	$	0.75
2-Jan-2020		200,000	2.0	2-Jan-2022	$	0.50
27-Jan-2020	1,750,000		3.0	27-Jan-2023	$	0.75
27-Jan-2020		189,240	2.0	27-Jan-2022	$	0.50
	7,804,242	**905,557**				

Note 1: On October 15, 2019, the Corporation obtained approval to extend 2,774,992 warrants to March 31, 2020. These subscriber warrants were previously extended.

The Corporation adopted a stock option plan ("Plan") on August 4, 2005. The Plan is administered by the Board of Directors of the Corporation who establish exercise prices, at not less than market price at the date of grant, and vesting periods, which to date have been set between one day and three years. Options under the Plan remain exercisable for five years from the date of grant. The option pool was amended on February 26, 2018. As a result, the maximum number of common shares reserved for issuance for options that may be granted under the Plan is 3,321,955.

As at January 31, 2020, the Corporation had 2,291,062 options outstanding, of which 1,803,870 are vested and exercisable. As at March 4, 2020, the Corporation had 2,291,062 options outstanding, of which 1,871,995 are vested and exercisable.

Other Critical Accounting Estimates

The preparation of the financial statements requires management to make judgments, estimates, and assumptions that affect the reported amounts of revenues, expenses, assets, and liabilities, and the disclosures of contingent assets and liabilities, at the end of the reporting periods. However, uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of the asset or liability affected in future periods. In the process of applying the Corporation's accounting policies, management has made the following judgments, which have the most significant effects on the amounts recognized in the financial statements.

Carrying amount of ACOA research and development repayable funding (ACOA loan)

The significant assumptions used in determining the discounted cash flows include estimating the amount and timing of future revenue for the Corporation and the discount rate. As the ACOA loans are repayable based on a percentage of gross revenue, the determination of the amount and timing of future revenue significantly impacts the initial fair value of the loan, as well as the carrying value of the loans at each reporting date. The Corporation is in the commercialization and early-revenue stages for its products;

accordingly, determination of the amount and timing of revenue requires significant judgment by management. Management's estimate of future revenues assumes some revenue growth in the near future. The discount rate determined on initial recognition of the loans is used to determine the present value of estimated future cash flows expected to be required to settle the debt. In determining the appropriate discount rates, the Corporation considered the interest rates of similar long-term debt arrangements, with similar terms. The loans are repayable based on a percentage of gross revenue, accordingly finding financing arrangements with similar terms is difficult and management was required to use significant judgment in determining the appropriate discount rates. Management used a discount rate of 35% to discount the loans.

If the weighted average discount rate used in determining the initial fair value and the carrying value at each reporting date of all loans, with repayment terms based on future revenue, had been determined to be higher by 10% (45%) or lower by 10% (25%), the carrying value of the long-term debt at January 31, 2020 would have been an estimated $78,221 lower or $122,968 higher, respectively. A 10% increase or decrease in the total forecasted revenue would result in the carrying value at January 31, 2020 being an estimated $23,195 higher or $24,379 lower, respectively. If the total forecasted revenue were reduced to $nil, no amounts would be forecast to be repaid on the non-current portion of the ACOA loans and the ACOA loan at January 31, 2020 would be $97,745, which would be a reduction in the ACOA loan by $267,472.

Share-based payments

Share-based payments are estimated using a Black-Scholes pricing model. This model requires management estimates and assumptions on the life of the instrument and the volatility.

Future accounting pronouncements - Standards issued but not yet effective

As at the date the Corporation's Board of Directors approved the financial statements and MD&A, certain new standards, amendments, and interpretations to existing IFRS standards have been published but are not yet effective and have not been adopted by the Corporation and in certain cases have been early-adopted.

All new standards, amendments, and annual improvements were early adopted where possible and/or had no significant impact on the financial statements of the Corporation, except IFRS 16 as discussed above.

In certain cases, new standards, amendments, and annual improvements were not relevant to the Corporation.

Additional information relating to the Corporation may be found at www.sedar.com