

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

September 6, 2019

### **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 3 and 9-month periods ended July 31, 2019 and July 31, 2018 was prepared by management of Avivagen Inc. ("Avivagen" or the "Corporation") and approved by the Board of Directors on September 6, 2019.

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 interim 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 ("IFRS") Standards reporting.

This MD&A discusses material changes in the Corporation's financial condition, results of operations and cash flows for the 3 and 9-month periods ended July 31, 2019. Such discussion and comments on liquidity and capital resources should be read in conjunction with the unaudited interim financial statements dated July 31, 2019 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

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

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.

### **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 to support animal health, including replacing antibiotics in livestock feeds. Supporting the animal's own health defences helps optimize the health and growth of the animals. The Corporation's unique, proprietary technology, known as OxC-beta™ (fully-oxidized beta-carotene) Technology, is based on Avivagen's discovery of the propensity of the micronutrient  $\beta$ -carotene to naturally undergo oxidation to generate polymeric oxidation products. This previously unrecognized class of compound possesses a unique combination of health benefits that very plausibly account for  $\beta$ -carotene's non-vitamin A activity.

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 replacement product for in-feed antibiotics for livestock 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 optimizes 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 food animal production and can threaten human health.

The health benefits observed in livestock have given rise to one of Avivagen's longer-term goals, which is to access the prophylactic or therapeutic 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

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

Benefits". The paper reported the important discovery that counterparts of fully oxidized beta carotene ("OxBC"), containing the bioactive  $\beta$ -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 has the potential to replace antibiotics in its food-animal applications: field trials have established that it helps maintain optimal health and 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.

In 2017, the Corporation delivered its first industrial-scale orders of OxC-beta™ Livestock to the feed industry. These purchases by UNAHCO, Inc. in the Philippines during the 2017 fiscal year were for 1,100kg of OxC-beta™ Livestock 10% premix at pricing in line with Avivagen's target.

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. The Corporation also shipped 100kg of OxC-Beta™ Livestock to Thailand in the fiscal year ended October 31, 2018. The orders delivered in 2018 supplemented approximately 300 million kg of UNAHCO, Inc. branded commercial feed, an amount sufficient for about 120 million broiler chickens or 14 million piglets. For the 9-month period ended July 31, 2019, the Corporation delivered 4,000kg of OxC-beta™ Livestock 10% premix to UNAHCO, Inc.

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.

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<sup>1</sup>. 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, Mexico, Taiwan, and Thailand. Avivagen self-affirmed GRAS status for OxC-beta™ Livestock, which will permit 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. 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.

<sup>1</sup>Alltech 2019 Annual Global Feed Survey, ALLTECH, Nicholasville, Kentucky, USA 40356

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

Regulatory approvals in China, Canada, New Zealand 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 U.S., Chinese, New Zealand, 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 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 \$(29,889,680) (October 31, 2018: \$(26,395,727)). 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 July 31, 2019, the Corporation had cash and cash equivalents of \$1,879,247 (October 31, 2018: \$2,207,393).

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 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.

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

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, Taiwan, Thailand, Mexico, and the Philippines approved for distribution for major livestock species as of the date of this report, 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, New Zealand, 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 3-month period ended July 31, 2019, the Corporation had a net loss from all operations of \$(1,278,685) (3 months ended July 31, 2018: \$(1,031,779)). For the 9-month period ended July 31, 2019, the Corporation had a net loss from all operations of \$(3,713,401) (9 months ended July 31, 2018: \$(3,292,922)). Whether and when the Corporation can attain profitability and positive cash flow is uncertain. The accumulated deficit is \$(29,889,680) as of July 31, 2019 (October 31, 2018: \$(26,395,727)). 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 year. 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**

	<b>As at July 31, 2019</b>	<b>As at October 31, 2018</b>
Cash and cash equivalents	\$ 1,879,247	\$ 2,207,393
Total assets	\$ 2,597,561	\$ 3,109,230
Current liabilities	\$ 1,167,993	\$ 1,009,987
Non-current portion of Atlantic Canada Opportunities Agency long-term liabilities	\$ 273,166	\$ 238,152
Non-current portion of long-term debt	\$ 3,480,254	\$ 1,767,312
Total liabilities	\$ 4,921,413	\$ 3,105,451
Total shareholders' equity	\$ (2,323,852)	\$ 93,779

### **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.

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

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 \$63,859 based on OxC-beta product sales of \$638,593 in the nine-month period ended July 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 at an exercise price of \$1.10. The warrants will remain exercisable up to 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 such time as the warrants are exercised or 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 will be 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 will 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.

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

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 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 84.57%. 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. The discount rate for the First Closing Debentures was determined to be 20.78%.

Initial recognition of the debt component of the First Closing Debentures was at its fair value at a discount rate of 20.78%. \$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.

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 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 84.45%. 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. The discount rate for the Second Closing Debentures was determined to be 20.23%.

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.

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 with future accrued interest is as follows:

2019	\$	135,555
2020		647,937
2021		645,360
2022		5,703,192
<b>Total</b>	<b>\$</b>	<b>7,132,044</b>

### **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 \$456,197 which are due within the current period, and mostly within 30 days.

The Corporation is committed under three agreements for the rental of office space at a current monthly rate of \$13,563 which is subject to increases in future periods. Two of the agreements will expire on

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

March 31, 2020. The third agreement will expire on April 30, 2020. This operating lease requires rental payments over the life of the lease as follows (undiscounted value per fiscal year):

2019	\$	40,690
2020	\$	70,167
<b>Total</b>	<b>\$</b>	<b>110,857</b>

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 will issue up to 500,000 common shares of the Corporation at \$0.60 per share as reimbursement to the China JV partner for expenses incurred to date. The termination agreement also provides for issue of additional common shares of the Corporation with a value of \$350,000 contingent on certain conditions being met. It is not probable that the conditions will be met. The Corporation will enter into a future consulting agreement with a former director of the China JV to provide business advice in the China market. Under the terms of the agreement, subject to TSX.V approval, 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 of the execution of the agreement.

In the fiscal year ended October 31, 2018, the Corporation recorded \$250,000 as an expense representing 416,667 common shares to be issued in the future at \$0.60 per common share. The issue of such reserve for common shares is conditional on the successful winding up of the joint venture. Should the joint venture not be successfully wound up, the Corporation will reverse the \$250,000 expense and the 416,667 reserve for common shares from equity.

On June 13, 2019, the Corporation signed a Shareholder's Agreement with Mimi's Rock, Corp. ("MRI") to create a new 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. MRI 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. MRI 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 MRI 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 MRI, as each hold 50% of the voting rights, Avivagen and MRI 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*.

**Summary of Quarterly Results from Continuing Operations**

	<b>3 Months Ended with year-to-date (YTD)</b>			
	<b>July 31 2019</b>	<b>April 30 2019</b>	<b>January 31 2019</b>	<b>YTD Total 2019</b>
Total Revenue from continuing operations	\$12,484	\$303,984	\$322,125	\$638,593
Total Comprehensive Loss from continuing operations	\$(1,278,685)	\$(1,292,919)	\$(1,141,797)	\$(3,713,401)
Net Loss per Share (Basic and Diluted) from continuing operations	\$(0.04)	\$(0.04)	\$(0.03)	\$(0.11)

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

	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 from continuing operations	\$346,284	\$364,213	\$218,879	\$143,196	\$1,072,572
Total Comprehensive Loss from continuing operations	\$(1,541,137)	\$(1,031,779)	\$(1,019,555)	\$(1,241,588)	\$(4,834,059)
Net Loss per Share (Basic and Diluted) from continuing operations	\$(0.05)	\$(0.03)	\$(0.03)	\$(0.04)	\$(0.15)

	3 Months Ended with year-to-date (YTD)				
	October 31 2017	July 31 2017	April 30 2017	January 31 2017	YTD Total 2017
Total Revenue from continuing operations	\$65,633	\$144,217	\$5,529	\$40,281	\$255,660
Total Comprehensive Loss from continuing operations	\$(1,338,603)	\$(1,250,567)	\$(1,441,584)	\$(1,014,891)	\$(5,045,645)
Net Loss per Share (Basic and Diluted) from continuing operations	\$(0.04)	\$(0.04)	\$(0.05)	\$(0.04)	\$(0.17)

**Selected Financial Information from Continuing Operations**

	3 months ended	
	July 31, 2019	July 31, 2018
Revenue	\$ 12,484	\$ 364,213
Operating expenses <sup>1</sup>	\$ 1,290,023	\$ 1,257,554
Total loss	\$ (1,278,685)	\$ (1,031,779)
Basic and diluted loss per share	\$ (0.04)	\$ (0.03)

	9 months ended	
	July 31, 2019	July 31, 2018
Revenue	\$ 638,593	\$ 726,288
Operating expenses <sup>1</sup>	\$ 4,062,180	\$ 3,743,296
Total loss	\$ (3,713,401)	\$ (3,292,922)
Basic and diluted loss per share	\$ (0.11)	\$ (0.10)

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 Continuing Operations**

**3 months ended July 31, 2019 compared to 3 months ended July 31, 2018**

	3 months ended July 31, 2019	3 months ended July 31, 2018	Variance
<b>Continuing operations</b>			
Revenues	\$ 12,484	\$ 364,213	\$ (351,729)
Cost of products sold	1,146	138,438	137,292
<b>Gross margin</b>	<b>11,338</b>	<b>225,775</b>	<b>(214,437)</b>
Selling, general and administration	868,195	979,404	111,209
Research	131,694	182,828	51,134
Depreciation of equipment	1,159	1,159	-
Finance cost	288,975	94,163	(194,812)
<b>Total expenses</b>	<b>1,290,023</b>	<b>1,257,554</b>	<b>(32,469)</b>
<b>Total comprehensive loss for the period</b>	<b>\$ (1,278,685)</b>	<b>\$ (1,031,779)</b>	<b>\$ (246,906)</b>

Revenue from continuing operations for the 3-month period ended July 31, 2019 totaled \$12,484 compared to \$364,213 for the 3-month period ended July 31, 2018. The difference of \$(351,729) is due mainly to decreased sales of OxC-beta™ Technology product.

Expenses from continuing operations for the 3-month period ended July 31, 2019 totaled \$1,290,023 compared to \$1,257,554 for the 3-month period ended July 31, 2018. The difference of \$(32,469) is due

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

mainly to an increase in finance cost for the period related to long-term debt offset by decreased salaries and share-based payment expenses incurred in the 3-month period.

Total comprehensive loss from continuing operations for the 3-month period ended July 31, 2019 totaled \$(1,278,685) compared to a total comprehensive loss of \$(1,031,779) for the 3-month period ended April 30, 2018. The difference of \$(246,906) is due mainly to increased expenses related to finance cost and decreased product revenues.

**9 months ended July 31, 2019 compared to 9 months ended July 31, 2018**

	9 months ended July 31, 2019	9 months ended July 31, 2018	Variance
<b>Continuing operations</b>			
Revenues	\$ 638,593	\$ 726,288	\$ (87,695)
Cost of products sold	289,814	275,914	(13,900)
<b>Gross margin</b>	<b>348,779</b>	<b>450,374</b>	<b>(101,595)</b>
Selling, general and administration	2,847,378	2,990,004	142,626
Research	575,841	528,532	(47,309)
Depreciation of equipment	3,477	1,381	(2,096)
Finance cost	635,484	223,379	(412,105)
<b>Total expenses</b>	<b>4,062,180</b>	<b>3,743,296</b>	<b>(318,884)</b>
<b>Total comprehensive loss for the period</b>	<b>\$ (3,713,401)</b>	<b>\$ (3,292,922)</b>	<b>\$ (420,479)</b>

Revenue from continuing operations for the 9-month period ended July 31, 2019 totaled \$638,593 compared to \$726,288 for the 9-month period ended July 31, 2018. The difference of \$(87,695) is due mainly to decreased sales of OxC-beta™ for Livestock product to UNAHCO.

Expenses from continuing operations for the 9-month period ended July 31, 2019 totaled \$4,062,180 compared to \$3,743,296 for the 9-month period ended July 31, 2018. The difference of \$(318,884) is due mainly to an increase in finance cost for the period related to the settlement of existing long-term debt and the issuance of new long-term debt as well as a termination expense incurred in the 9-month period.

Total comprehensive loss from continuing operations for the 9-month period ended July 31, 2019 totaled \$(3,713,401) compared to a total comprehensive loss of \$(3,292,922) for the 9-month period ended July 31, 2018. The difference of \$(420,479) is due mainly to decreased sales of OxC-beta™ Technology product as well as increased finance costs related to long-term debt.

The following details the nature of expenses for the 3 and 9-month periods ended July 31, 2019 and 2018:

	Three months ended		Nine months ended	
	July 31, 2019	July 31, 2018	July 31, 2019	July 31, 2018
<b>Selling, general, and administrative</b>				
Salary, wages, and benefits	\$ 194,744	\$ 239,991	\$ 612,450	\$ 688,947
Professional fees and other	535,592	508,378	1,863,773	1,797,105
Board fees	48,167	43,996	143,907	139,285
Share-based payment	89,692	187,039	227,248	364,667
<b>Total selling, general, and administrative</b>	<b>\$ 868,195</b>	<b>\$ 979,404</b>	<b>2,847,378</b>	<b>\$ 2,990,004</b>
<b>Research</b>				
Salary, wages, and benefits	\$ 90,615	\$ 113,872	\$ 444,764	\$ 330,645
Professional fees and other	41,079	68,956	148,424	197,887
Government grant on research expenses	Nil	Nil	(17,347)	Nil
<b>Total research</b>	<b>\$ 131,694</b>	<b>\$ 182,828</b>	<b>\$ 575,841</b>	<b>\$ 528,532</b>

Selling, general and administration expenses, as noted in the table above, were \$868,195 for the 3-month period ended July 31, 2019, compared to \$979,404 for the 3-month period ended July 31, 2018.

Expenses for the 3-month period ended July 31, 2019 were \$111,209 lower due to an increase in investor relations and product registration expense offset by lower share-based payment and salary expense.

Board fees paid in the 3-month period ended July 31, 2019 were \$48,167 compared to \$43,996 for the same period in the prior year. Share-based payments for the 3-month period ended July 31, 2019 were \$89,692 compared to \$187,039 for the same period in the prior year.

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

Selling, general, and administrative expenses of \$868,195 consist mainly of professional fees and salary and wages in support of the business development and registration.

Research costs were \$131,694 for the 3-month period ended July 31, 2019 compared to \$182,828 for the 3-month period ended July 31, 2018. Research costs were \$51,134 lower due mainly to decreased research and development salaries expense and professional fees.

Selling, general and administration expenses, as noted in the table above, were \$2,847,378 for the 9-month period ended July 31, 2019, compared to \$2,990,004 for the 9-month period ended July 31, 2018.

Expenses for the 9-month period ended July 31, 2019 were \$142,626 lower due to decreased share-based payment expenses and lower salary expense.

Board fees paid in the 9-month period ended July 31, 2019 were \$143,907 compared to \$139,285 for the same period in the prior year. Share-based payments for the 9-month period ended July 31, 2019 were \$227,248 compared to \$364,667 for the same period in the prior year.

Selling, general, and administrative expenses of \$2,847,378 consist mainly of professional fees and salary and wages in support of the business development and registration.

Research costs were \$575,841 for the 9-month period ended July 31, 2019 compared to \$528,532 for the 9-month period ended July 31, 2018. Research costs were \$47,309 higher due mainly to a termination expense incurred in the 2019 period offset by a government grant related to a product trial.

Finance cost for the 3 and 9 months ended July 31, 2019 and July 31, 2018 consists of the following:

	Three months ended		Nine months ended	
	July 31, 2019	July 31, 2018	July 31, 2019	July 31, 2018
Interest accretion on ACOA repayable funding	\$ 33,843	\$ 18,959	\$ 98,873	\$ 153,430
Interest accretion on BBHLT long-term debt	Nil	69,761	125,950	53,619
Amortization of transaction costs on BBHLT long-term debt	Nil	5,443	8,845	16,330
Interest accretion on settlement of BBHLT long-term debt	Nil	Nil	62,447	Nil
Interest accretion on debenture long-term debt	227,378	Nil	301,845	Nil
Amortization of transaction costs on debenture long-term debt	27,754	Nil	37,524	Nil
<b>Total finance cost</b>	<b>\$ 288,975</b>	<b>\$ 94,163</b>	<b>\$ 635,484</b>	<b>\$ 223,379</b>

Finance cost for the 3 months ended July 31, 2019 increased by \$194,812 compared to the prior 3-month period. This is due mainly to an increase in the accretion expense on the ACOA repayable funding and interest accretion on the Senior Secured Debentures.

Finance cost for the 9 months ended July 31, 2019 increased by \$412,105 compared to the prior 9-month period. This is due mainly to an increase in the accretion expense related to the settlement of the BBHLT long-term debt as well as an increase in the accretion expense on the ACOA repayable funding and interest accretion on the Senior Secured Debentures.

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

**Comparison of Cash Flows**

	3 months ended July 31, 2019	3 months ended July 31, 2018	9 months ended July 31, 2019	9 months ended July 31, 2018
<b>Cash Flows from (used in) Operating Activities</b>				
Loss from operations	\$ (1,278,685)	\$ (1,031,779)	\$ (3,713,401)	\$ (3,292,922)
Items not affecting cash and non-cash adjustments:				
Depreciation of equipment	1,159	1,159	3,477	1,381
Share-based compensation	89,692	187,039	227,248	364,667
Finance cost	288,975	94,163	635,484	223,379
Net effect of foreign exchange rates on cash	4,260	799	45	1,408
Changes in operating working capital items:				
Trade and other accounts receivable	2,516	60,196	153,155	65,315
Prepaid expenses	(23,934)	23,582	(39,101)	(5,526)
Inventories	(6,938)	(191,233)	185,196	(367,637)
Accounts payable and accrued liabilities	(56,691)	(76,724)	(306,382)	(33,418)
<b>Cash Flows used in Operating Activities</b>	<b>(979,646)</b>	<b>(932,798)</b>	<b>(2,854,279)</b>	<b>(3,043,353)</b>
<b>Cash Flows from (used in) Investing Activities</b>				
Purchase of equipment	(119,204)	-	(119,204)	(69,539)
<b>Cash Flows from (used in) Investing Activities</b>	<b>(119,204)</b>	<b>-</b>	<b>(119,204)</b>	<b>(69,539)</b>
<b>Cash Flows from (used in) Financing Activities</b>				
Proceeds from issuance of private placement units	-	-	-	4,058,500
Share issuance cost	-	-	-	(400,155)
Proceeds from the issuance of long-term debt	-	754,205	4,302,400	754,205
Proceeds from common shares issued with long-term debt	-	-	1,075,600	-
Transaction fees on issuance of long-term debt	-	-	(397,567)	-
Warrants issued with long-term debt	-	45,795	60,746	45,795
Settlement of principal and accrued interest on long-term debt	-	-	(2,034,929)	-
Repayment of research and development repayable funding	(107,257)	(25,566)	(107,257)	(25,566)
Repayment of interest on long-term debt	(135,587)	(19,179)	(253,611)	(58,094)
Proceeds from the exercise of share purchase warrants	-	111,377	-	142,577
<b>Cash Flows from (used in) Financing Activities</b>	<b>(242,844)</b>	<b>866,632</b>	<b>2,645,382</b>	<b>4,517,262</b>
<b>Increase (decrease) in cash and cash equivalents during the period</b>	<b>(1,341,694)</b>	<b>(66,166)</b>	<b>(328,101)</b>	<b>1,404,370</b>
Net effect of exchange rate changes on cash and cash equivalents	(4,260)	(799)	(45)	(1,408)
Cash and cash equivalents, beginning of period	3,225,201	3,070,064	2,207,393	1,600,137
<b>Cash and cash equivalents, end of period</b>	<b>\$ 1,879,247</b>	<b>\$ 3,003,099</b>	<b>\$ 1,879,247</b>	<b>\$ 3,003,099</b>

For the 3-month period ended July 31, 2019, the net decrease in cash of \$1,341,694 is the result of \$979,646 used in operating activities, consisting mainly of \$1,278,685 in losses from continuing operations offset by \$(85,047) in changes in working capital and \$288,975 in accrued interest. Cash flows used in financing activities of \$242,844 consisted of repayment of interest on long-term debt and research and development repayable funding. Investing activities consist of \$119,204 for the purchase of equipment.

For the 3-month period ended July 31, 2018, the net decrease in cash of \$66,166 is the result of \$932,798 used in operating activities, consisting mainly of \$1,031,779 in losses from continuing operations, and \$(184,179) in changes in working capital offset by \$94,163 in accrued interest. Cash flows from financing activities were \$866,632, consisting of \$800,000 in cash proceeds from the issuance of long-term debt and associated warrants and \$111,377 in cash proceeds from the exercise of warrants offset by \$44,745 in interest repaid on the Corporation's long-term credit facility. There were no investing activities in the reporting period.

For the 9-month period ended July 31, 2019, the net decrease in cash of \$328,101 is the result of \$2,854,279 used in operating activities, consisting mainly of \$3,713,401 in losses from continuing operations offset by \$7,132 in changes in working capital and \$635,484 in accrued interest. Cash inflows from financing activities of \$2,645,382 consisted of net proceeds of \$5,041,179 in the issuance of Senior Secured Debentures offset by \$(2,395,797) in the repayment of existing long-term debt and repayment of interest. Investing activities consist of \$119,204 for the purchase of equipment.

For the 9-month period ended July 31, 2018, the net increase in cash of \$1,404,370 is the result of \$3,043,353 used in operating activities, consisting mainly of \$3,292,922 in losses from continuing operations and \$(341,266) in changes in working capital offset by \$223,379 in accrued interest. Cash inflows from financing activities were \$4,517,262, consisting of \$4,058,500 in cash proceeds from the issuance of private placement units and \$142,577 in cash proceeds from the exercise of warrants offset by \$(400,155) in share issue costs and \$(83,660) in interest repaid on the Corporation's long-term credit facility. Investing activities consist of \$69,539 for the purchase of equipment.

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 July 31, 2019, the Corporation has issued 34,907,334 common shares and 416,667 common shares reserved for future issue and has 6,984,297 total warrants outstanding. The Corporation has also granted 2,291,062 stock options.

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

Share-based compensation for the 3-month period ended July 31, 2019 was \$89,692 compared to \$187,039 for the 3-month period ended July 31, 2018. Share-based compensation for the 9-month period ended July 31, 2019 was \$227,248 compared to \$364,667 for the 9-month period ended July 31, 2018.

On May 20, 2014, the Corporation issued 60,000 SARs to the then-current Chairman of the Board of Directors. The SARs expired on May 20, 2019.

### **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 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.

### **Summary of Outstanding Shares and Dilutive Instruments**

As of July 31, 2019 and September 6, 2019, the Corporation had 34,907,334 common shares outstanding. As of July 31, 2019 and September 6, 2019, the Corporation had outstanding 5,967,980 investor warrants, 516,317 agent warrants, and 500,000 long-term debt warrants for a total of 6,984,297 warrants issued.

Date of Issue	Subscriber Warrants	Agent Warrants	Long-term Debt Warrants	Term (Years)	Date of Expiry	Exercise Price
16-Dec-2014	1,163,738			4.9	30-Oct-2019 <sup>1</sup>	\$ 1.00
30-Oct-2015			500,000	4.0	13-Nov-2019	\$ 1.10
1-Jun-2016	2,774,992			3.4	30-Oct-2019 <sup>1</sup>	\$ 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
	<b>5,967,980</b>	<b>516,317</b>	<b>500,000</b>			

Note 1: On January 17, 2019, 1,163,738 subscriber warrants and 2,774,992 subscriber warrants were approved by the TSX.V to be extended to October 30, 2019. 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.

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

As at July 31, 2019, the Corporation had 2,291,062 options outstanding, of which 1,488,235 are vested and exercisable. As at September 6, 2019, the Corporation had 2,291,062 options outstanding, of which 1,556,360 are vested and exercisable.

On May 20, 2014, the Corporation issued 60,000 SARs to the then-current Chairman of the Board of Directors with an exercise price of \$0.70. They expired on May 20, 2019.

### **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.

### **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, 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.

The International Accounting Standards Board issued on January 13, 2016 a new accounting standard called IFRS 16 *Leases*. IFRS 16 *Leases* replaces IAS 17 *Leases*. IFRS 16 *Leases* requires all leases to be reported on an entity's statement of financial position as assets and liabilities. IFRS 16 *Leases* is effective January 1, 2019. The Corporation has assessed and determined that there will be no impact to the financial statements when adopted on November 1, 2019. As at November 1, 2019, the Corporation will have five months remaining on its only long-term lease contracts. The Corporation has another lease contract for office space which has a remaining duration of less than one year. The Corporation will adopt the modified retrospective approach and elect the short-term lease exemption. Therefore, no asset or liability will be recognized as at November 1, 2019 unless the Corporation renews the lease before November 1, 2019.

All other new standards, amendments, and annual improvements were early adopted or were not relevant.

### **Events subsequent to the reporting period**

Subsequent to July 31, 2019, the Corporation fulfilled an order for 2,000kg of Ox-C-Beta for Livestock from a customer in the Philippines and an order for Vivamune Health Chews from a customer in Taiwan.

Additional information relating to the Corporation may be found at [www.sedar.com](http://www.sedar.com)