REVIVE THERAPEUTICS LTD.

INTERIM MANAGEMENT'S DISCUSSION AND ANALYSIS – QUARTERLY HIGHLIGHTS

FOR THE THREE MONTHS ENDED SEPTEMBER 30, 2018

Introduction

The following interim Management's Discussion & Analysis ("Interim MD&A") of Revive Therapeutics Ltd. ("Revive" or the "Company") for the three months ended September 30, 2018 has been prepared to provide material updates to the business operations, liquidity and capital resources of the Company since its last annual management's discussion & analysis, being the Management's Discussion & Analysis ("Annual MD&A") for the fiscal year ended June 30, 2018. This Interim MD&A does not provide a general update to the Annual MD&A, or reflect any non-material events since the date of the Annual MD&A.

This Interim MD&A has been prepared in compliance with section 2.2.1 of Form 51-102F1, in accordance with National Instrument 51-102 – Continuous Disclosure Obligations. This discussion should be read in conjunction with the Annual MD&A, audited annual consolidated financial statements of the Company for the years ended June 30, 2018, and June 30, 2017, together with the notes thereto, and unaudited condensed interim consolidated financial statements of the Company for the three months ended September 30, 2018, together with the notes thereto. Results are reported in Canadian dollars, unless otherwise noted. The Company's financial statements and the financial information contained in this Interim MD&A are prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board and interpretations of the IFRS Interpretations Committee. The unaudited condensed interim consolidated financial statements have been prepared in accordance with International Standard 34, Interim Financial Reporting. Accordingly, information contained herein is presented as of November 28, 2018, unless otherwise indicated.

For the purposes of preparing this Interim MD&A, management, in conjunction with the Board of Directors, considers the materiality of information. Information is considered material if: (i) such information results in, or would reasonably be expected to result in, a significant change in the market price or value of Revive's common shares; (ii) there is a substantial likelihood that a reasonable investor would consider it important in making an investment decision; or (iii) it would significantly alter the total mix of information available to investors. Management, in conjunction with the Board of Directors, evaluates materiality with reference to all relevant circumstances, including potential market sensitivity.

Further information about the Company and its operations can be obtained from the offices of the Company or on SEDAR at **www.sedar.com**.

Caution Regarding Forward-Looking Statements

This Interim MD&A contains certain forward-looking information and forward-looking statements, as defined in applicable securities laws (collectively referred to herein as "forward-looking statements"). These statements relate to future events or the Company's future performance. All statements other than statements of historical fact are forward-looking statements. Often, but not always, forward-looking statements can be identified by the use of words such as "plans", "expects", "is expected", "budget", "scheduled", "estimates", "continues", "forecasts", "projects", "predicts", "intends", "anticipates" or "believes", or variations of, or the negatives of, such words and phrases, or statements that certain actions, events or results "may", "could", "would", "should", "might" or "will" be taken, occur or be achieved. Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause actual results to differ materially from those anticipated in such forward-looking statements. The forward-looking statements in this Interim MD&A speak only as of the date of (i) this Interim MD&A; or (ii) as of the date specified in such statement. The following table outlines certain significant forward-looking statements contained in this Interim MD&A and provides the material assumptions used to develop such forward-looking statements and material risk factors that could cause actual results to differ materially from the forward-looking statements.

Forward-looking Statements	Assumptions	Risk Factors
The Company's (i) development of new drug and product candidates, (ii) demonstration of such drug and product candidates' safety and efficacy in clinical trials, and (iii) obtaining regulatory approval to commercialize these drug and product candidates.	Financing will be available for development of new drug and product candidates and conducting clinical studies; the actual results of the clinical trials will be favourable; development costs will not exceed Revive's expectations; the Company will be able to retain and attract skilled staff; the Company will be able to recruit suitable patients for clinical trials; all requisite regulatory and governmental approvals to commercialize the drug and product candidates will be received on a timely basis upon terms acceptable to Revive; applicable economic conditions are favourable to Revive.	Availability of financing in the amount and time frame needed for the development and clinical trials may not be favourable; increases in costs; the Company's ability to retain and attract skilled staff; the Company's ability to recruit suitable patients for clinical trials; timely and favourable regulatory and governmental compliance, acceptances, and approvals; interest rate and exchange rate fluctuations; changes in economic conditions.
The Company's ability to obtain the substantial capital it requires to fund research and operations.	Financing will be available for Revive's research and operations and the results thereof will be favourable; debt and equity markets, exchange and interest rates and other applicable economic conditions are favourable to Revive.	Changes in debt and equity markets; timing and availability of external financing on acceptable terms; increases in cost of research and operations; interest rate and exchange rate fluctuations; adverse changes in economic conditions.
Factors affecting pre-clinical research, clinical trials and regulatory approval process of the Company's drug candidates.	Actual costs of pre-clinical research, clinical and regulatory processes will be consistent with the Company's current expectations; the Company will be able to retain and attract skilled staff; the Company will be able to recruit suitable patients for clinical trials; the Company will be able to complete pre-clinical research and clinical studies on a timely basis with favourable results; all applicable regulatory and governmental approvals for drug candidates will be received on a timely basis with terms acceptable to Revive; debt and equity markets, exchange and interest rates, and other applicable economic and political conditions are favourable to Revive; there will be a ready market for the drug and product candidates.	Revive's drug and product candidates may require time-consuming and costly pre-clinical and clinical studies and testing and regulatory approvals before commercialization; the Company's ability to retain and attract skilled staff; the Company's ability to recruit suitable patients for clinical trials; adverse changes in regulatory and governmental processes; interest rate and exchange rate fluctuations; changes in economic and political conditions; the Company will not be adversely affected by market competition.

Forward-looking Statements	Assumptions	Risk Factors
The Company's ability to commercialize on its own or find and enter into agreements with potential partners to bring viable drug and product candidates to commercialization.	Revive will be able to commercialize on its own or to find a suitable partner and enter into agreements to bring drug and product candidates to market within a reasonable time frame and on favourable terms; the costs of commercializing on its own or entering into a partnership will be consistent with Revive's expectations; partners will provide necessary financing and expertise to bring drug and product candidates to market successfully and profitably.	Revive will not be able to commercialize on its own or find a partner and/or enter into agreements within a reasonable time frame; if the Company enters into agreements, these agreements may not be on favourable terms to Revive; costs of entering into agreements may be excessive; potential partners will not have the necessary financing or expertise to bring drug and product candidates to market successfully or profitably.
The Company's ability to obtain and protect the Company's intellectual property rights and not infringe on the intellectual property rights of others.	Patents and other intellectual property rights will be obtained for viable drug and product candidates; patents and other intellectual property rights obtained will not infringe on others.	Revive will not be able to obtain appropriate patents and other intellectual property rights for viable drug and product candidates; patents and other intellectual property rights obtained will be contested by third parties; no proof that acquiring a patent will make the drug or product more competitive.
The Company's ability to source markets which have demand for its products and successfully supply those markets in order to generate sales.	The anticipated markets for the Company's potential products and technologies will continue to exist and expand; the Company's products will be commercially viable and it will successfully compete with other research teams who are also examining potential products and therapeutics with regards to cannabinoids, gout, cystinuria, Wilson's disease, rare diseases, pain, inflammatory skin diseases, liver diseases, inflammation, autoimmune, and central nervous system disorders.	The anticipated market for the Company's potential products and technologies will not continue to exist and expand for a variety of reasons, including competition from other products and the degree of commercial viability of the potential product.
Future actions with respect to and potential impacts of pending claims.	Revive will be able to settle or otherwise obtain disposition of claims against it on favourable terms.	Revive may will not be able to settle pending claims on favourable terms; claims may be adjudicated in a manner that is not favourable to Revive.

Inherent in forward-looking statements are risks, uncertainties and other factors beyond the Company's ability to predict or control. Please also make reference to those risk factors referenced in the "Risk Factors"

section below. Readers are cautioned that the above chart does not contain an exhaustive list of the factors or assumptions that may affect the forward-looking statements, and that the assumptions underlying such statements may prove to be incorrect. Actual results and developments are likely to differ, and may differ materially, from those expressed or implied by the forward-looking statements contained in this Interim MD&A.

Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause the Company's actual results, performance or achievements to be materially different from any of its future results, performance or achievements expressed or implied by forward-looking statements. All forward-looking statements herein are qualified by this cautionary statement. Accordingly, readers should not place undue reliance on forward-looking statements. The Company undertakes no obligation to update publicly or otherwise revise any forward-looking statements whether as a result of new information or future events or otherwise, except as may be required by law. If the Company does update one or more forward-looking statements, no inference should be drawn that it will make additional updates with respect to those or other forward-looking statements, unless required by law.

The Company

The Company is a reporting issuer in the provinces of British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland. Its common shares are listed for trading on the TSX Venture Exchange under the symbol "RVV", on the OTCBB under the symbol "RVVTF" and the Frankfurt Stock Exchange in Germany under the symbol "31R". The Company's registered and head office is located at 5 Director Court, Suite 105, Vaughan, Ontario, L4L 4S5 and its website is available at **www.revivethera.com**.

Corporate Update

Over the last 18 months Revive has been focused on establishing strategic relationships and building its product and intellectual property portfolio with the aim of becoming a leading global specialty cannabis company. The next phase of the Company's growth plans is the development and commercialization of novel cannabis-based products and partnering with leading licensed producers of cannabis and pharmaceutical companies worldwide.

Product Strategy:

Revive is focused on commercializing differentiated cannabis-based products that have patent protection and are best-in-class with first mover advantage offering a better alternative over conventional cannabis-based products in the market. The Company's patent portfolio includes exclusive rights to five issued U.S. patents, one issued Canadian patent and two patent applications filed in the U.S., based on cannabinoid delivery systems and uses for specific diseases. The Company's strategy is to launch its cannabis-based products in Canada as recognized under the proposed regulations of Cannabis and Health Canada's Natural Health Products and Food and Drug regulations, with the objective to sell through legalized distribution channels, national retailers in the food, drug, mass market, and specialty and natural retail channels, be included in health insurance plans, and be distributed to countries globally.

The Company's advantageous position in Canada will allow it to gather invaluable patient data and real-world consumer experience of its products that will pave the way for new products, improved product labelling and marketing, expansion in major markets globally, and support potential new drug applications for future pharmaceutical cannabinoid-based products.

Revive's product portfolio will be a robust assortment of premium unique dosage offerings, such as, but not limited to, chewing gums, topicals, and alternate oral forms putting an emphasis on the cannabis and health

and wellness market. The potential advantages of Revive's products over conventional dosage forms of cannabis aim to achieve the following:

- better bioavailability, while bypassing the first-pass hepatic metabolism;
- faster and/or reliable onset of action;
- precise dosing that is consistent, accurate and repeatable;
- avoid irritation in the lungs, throat and stomach;
- ease of use for improved consumer and patient adherence and compliance;
- higher acceptance for those who find smoking or swallowing difficult; and
- potential for improved blood circulation to brain, cognitive function, and oral hygiene.

Business Development:

Revive is in discussions with leading Canadian licensed producers of cannabis to evaluate strategic collaborations for the Company's products, cannabinoid delivery system, liver research program, and intellectual property in developing and commercializing products for the cannabis and health and wellness market. The Company has secured and is also evaluating exclusive rights to unique cannabis-based products and technologies for the Canadian market. Lastly, the Company seeks to partner its non-core pharmaceutical program, bucillamine for the potential treatment in cystinuria and gout.

Overview:

The Company is a specialty cannabis company focused on the research, development, and commercialization of novel cannabinoid-based products. Revive is commercializing patent-protected, best-in-class cannabis-based products with first mover advantage in the multi-billion dollar cannabis and health and wellness market. The Company's novel cannabinoid delivery technology is being advanced to fill the unmet medical needs for diseases and disorders such as pain, inflammation, and wound care. Revive's cannabinoid pharmaceutical portfolio focus' on rare liver diseases, which the U.S. Food and Drug Administration ("FDA") granted to the Company orphan drug designation for cannabidiol in the treatment of autoimmune hepatitis.

We have expertise in pre-clinical and clinical research, regulatory, and business development activities. Our goal is to use these core competencies to advance our product candidates along the regulatory and clinical pathway toward commercial approval. We believe we have the ability to manage and perform the key critical aspects of the drug or product development process, including conducting or managing pre-clinical studies, clinical trials, developing and executing strategies for the protection of intellectual property, and interacting with regulatory authorities. We are actively seeking development and commercial partnerships that might facilitate these activities. In the meantime, we are prepared to advance our drug and product candidates and technologies toward commercial approval in the most efficient and expeditious manner.

Our initial focus was on the advancement of repurposing the drug bucillamine, an arthritis drug approved only in Japan and South Korea, for the treatment of gout (pain from flares). We have completed a Phase 2a clinical program with bucillamine in acute flares and we are currently seeking funding, development, and commercialization partners to advance into Phase 2b and into registration studies. We are also investigating bucillamine as a potential treatment for cystinuria (kidney stones). We initiated the U.S. Phase 2 clinical study in 2017 and we are currently seeking development and commercialization partners to advance the program in order to dedicate our resources in developing and commercializing novel cannabis-based products.

To expand our product pipeline of cannabis-based product, we employ, but not limited to, bioinformatics to perform scientific evaluation, clinical, and market assessment of potential pharmaceutical and cannabinoid-based products for diseases that fall into our target area of expertise. We focused on expanding our product

pipeline through the advancement of our cannabinoid-based therapeutics strategy in, but not limited to, pain, skin disorders, and liver diseases. We initiated a research discovery program of cannabinoid-based therapies targeting liver diseases with PhytoSciences Consulting LLC., a contract research organization. We are also actively engaging in a review of certain complimentary assets that we may consider acquiring or licensing. For example we licensed a potential novel delivery technology asset from Wisconsin Alumni Research Foundation (WARF). We have engaged and completed a sponsored research agreement with the University of Wisconsin-Madison for the research and development of the potential novel delivery technology to deliver cannabinoids (the "University of Wisconsin-Madison Research Agreement"). Also, we entered into a license agreement with South Carolina Research Foundation ("SCRF"), under which we will acquire an exclusive license from SCRF to develop and commercialize a portfolio of patents based on cannabinoid-based therapeutics, such as cannabidiol, in the treatment of autoimmune hepatitis, a rare liver disease.

Upon licensing a product candidate, our strategy is to apply our expertise and our partners' expertise to advance the product toward regulatory approval and commercial sale in major markets, including the U.S. and Canada. These activities include implementing intellectual property protection and registration strategies, formulating or reformulating existing drug products, performing or managing clinical trials in target jurisdictions, undertaking or managing the collection, collation and interpretation of research and clinical data, and submitting such data to the relevant regulatory authorities in compliance with applicable protocols and standards.

We may also develop next-generation versions of our product candidates, which will aim to improve upon the product candidate, and may have the potential to treat existing diseases better or new diseases that would otherwise remain untreated by the original product. We also develop and commercialize cannabinoid-based products for the medical and recreational marijuana markets.

In order to augment our ability to develop product candidates and effectively market any products in respect of which we obtain regulatory approval, we may seek to enter into an agreement or partnership with licensed producers of medical marijuana and biopharmaceutical companies that have development and/or sales and marketing capabilities. Entering into an agreement or partnership with an organization that has these capabilities may enable us to increase profitability and further accelerate development of our product candidates or enable us to develop the candidate in more than one indication, simultaneously.

In order to optimize the development of our product candidates, we outsource certain aspects of our research and product development activities. Factors that we consider in determining which activities to outsource include cost, relative expertise, capacity, and quality assurance. Product development functions that we have chosen to historically outsource include pre-clinical activities in support of regulatory filings, clinical trials, and manufacturing. We believe that our relationships with external laboratories enable us to complete pre-clinical testing faster and more efficiently than we can perform these activities in-house. Additionally, we will engage with independent contract research organizations (CROs) that are specifically equipped to manage future clinical trial and research projects, thus alleviating the need for us to commit redundant internal resources. For now, we believe that it is more efficient to outsource product manufacturing to contract manufacturing organizations (CMOs) and third-party suppliers.

Bioinformatics:

We utilize bioinformatics designed to identify repurposed and innovative compounds and cannabinoids for treatment of serious and unmet medical needs. We review scientific literature looking for mechanisms of action that could prove useful for diseases and then rank these drug-disease pairs based on a weighting system that incorporates, but not limited to, clinical studies, FDA correspondence, competition, and unmet medical need.

Principle Products

Cannabinoids

There are over 100 known cannabinoid compounds derived from the cannabis plant. The two primary cannabinoids used widely for medical and/or pharmaceutical purposes are Tetrahydrocannabinol (THC) and cannabidiol (CBD). It is widely known that THC is a major psychoactive cannabinoid and is a partial agonist of the cannabinoid receptor type 1 (CB_1) and cannabinoid receptor type 1 (CB_2) receptors and is widely used in pain management. CBD acts on many of the same receptors as THC, but without the psychoactive side effects. Clinical and pre-clinical data suggest that THC has positive effects on treating pain and CBD has positive effects on treating pain as well as, but is not limited to, a number of inflammatory diseases, skin disorders, and liver diseases.

Due to the mounting data from pre-clinical and clinical research the therapeutic effects of cannabis and the safety benefits of cannabinoids has led to significant interest from small-to-medium sized specialty pharmaceutical companies. Currently there are a number of cannabinoid products approved in US or EU: Sativex™ (GW Pharma), Marinol™ (AbbVie), Cesamet™ (Meda), and dronabinol, a synthetic THC (Insys). There are many companies supplying synthetic cannabinoids, cannabis extracts, and herbal cannabis to researchers for pre-clinical and clinical investigation for a number of diseases including cancer, diabetes, neuromuscular disorders, treatment of nausea, loss of appetite, pain relief, and muscle relaxation for cancer, HIV, multiple sclerosis, and arthritis patients. The cannabinoid-based medical use and pharmaceutical market is expected to grow significantly due to the potential benefits these products may provide over existing therapies.

Drug delivery technology strategy

The Company is focused on commercializing novel delivery technologies to effectively deliver cannabinoids through the skin and/or directly into the affected area of the skin, otherwise known as transdermal delivery and also via the mouth, otherwise known as buccal delivery.

The potential advantages of these delivery mechanisms of cannabinoids are:

- better bioavailability, while bypassing the first-pass hepatic metabolism;
- faster and/or reliable onset of action;
- precise dosing that is consistent, accurate and repeatable;
- avoid irritation in the lungs, throat and stomach;
- ease of use for improved consumer and patient adherence and compliance;
- higher acceptance for those who find smoking or swallowing difficult; and
- potential for improved blood circulation to brain, cognitive function, and hygiene.

For the transdermal delivery technology, the Company will explore the development of a proposed transdermal cannabinoid delivery technology.

Proposed transdermal drug delivery technology

The Company's transdermal cannabinoid delivery technology will initially deliver CBD in combination with chitosan and tannins in a controlled or sustained release fashion, systemically or locally, through the skin. The chitosan has blood-clotting and antimicrobial properties and tannins have antibacterial, antifungal, antioxidant and wound healing properties. The combination of cannabinoids, tannin, and chitosan has the potential to become a unique delivery technology to serve broad market opportunities for the health and wellness, medical and pharmaceutical cannabinoid markets.

Wisconsin relationship

The delivery technology was founded and based out of the University of Wisconsin. The Company has entered into an exclusive worldwide license agreement with the Wisconsin Alumni Research Foundation (WARF) to advance the development of the technology with cannabinoids. Under the terms of the agreement, the Company gained exclusive worldwide rights to intellectual property for the development and commercialization of cannabinoid-based products for therapeutic and/or prophylactic purposes delivered via transdermal, subcutaneous, buccal-mucosal or oral applications. In addition, we have engaged and successfully completed with the University of Wisconsin-Madison the research and development of the technology to potentially deliver cannabinoids (the "University of Wisconsin-Madison Research Agreement") via the transdermal route.

Proposed buccal cannabinoid delivery technology

The Company's buccal delivery technology, based on microencapsulation, will initially deliver either THC or CBD alone or as a combination of THC and CBD for the recreational and medical cannabis and health and wellness market. The initial format will be in the form of a chewing gum. In its natural form, cannabinoids are lipophilic, not water-soluble, and tend to stick to the chewing gum matrix, therefore diminishing effective release into the bloodstream. Microencapsulation renders cannabinoids soluble and dramatically increases the bioavailability of CBD, while largely bypassing the first pass hepatic metabolism. The Company is also investigating rapid dissolving applications to deliver cannabinoids via the buccal route.

AXIM Technologies relationship

The buccal delivery technology involving chewing gum is from AXIM® Biotechnologies, Inc. The Company has entered into a distribution and license agreement for the exclusive commercialization of AXIM® Biotechnologies CanChew+™ product, a CBD-based controlled release chewing gum, in Canada. The agreement defines a relationship where Revive will seek regulatory approval for AXIM® Biotechnologies chewing gum that contains full-spectrum hemp oil-derived CBD. Under the terms of the agreement, Revive will have a minimum purchase amount annually, which increases each year for the term of the agreement.

Potential indications

The Company is expanding its product pipeline with novel cannabinoid-centric treatments for pain, inflammation, general health and wellness, skin disorders, and liver diseases. Cannabinoids are a class of compounds derived from cannabis plants. The two well-known cannabinoids contained in cannabis are CBD and THC. For pain and skin disorders, Revive is focused on developing novel products designed to safely and effectively deliver cannabinoids through the skin, oral, and buccal mucosa routes.

Pain

According to Decision Resources, in 2017 there are expected to be approximately 15.2 million peripheral neuropathic pain patients in the United States, and pain treatment for these patients are expected to represent a total U.S. market size of approximately $3.3 billion in 2017.

The Company's proposed transdermal cannabinoid products would be designed to provide safe, effective relief from the pain of peripheral neuropathies. Peripheral neuropathies, or also known as neuropathic pain, are medical conditions caused by damage to the nerves in the peripheral nervous system. The peripheral nervous system includes nerves that run from the brain and spinal cord to the rest of the body. These conditions are caused from injured peripheral nerves, following herpes zoster, shingles, diabetes, chemotherapy, HIV, and other diseases. Peripheral neuropathies can also be caused by trauma or may result from surgical procedures. Additional neuropathic pain indications include lower back pain, cancer-related neuropathic pain, complex regional pain syndrome, and postoperative neuropathic pain.

Peripheral neuropathic pain generally is treated with tricyclic antidepressants, anticonvulsants such as duloxetine, depakote, pregabalin, gabapentin and topiramate, and serotonin/norepinephrine reuptake inhibitors, or SNRIs. Although tricyclic antidepressants, anticonvulsants, and SNRIs often show efficacy in treating neuropathic pain, they also have many drawbacks, including poor tolerability with side effects in most patients.

Revive's proposed transdermal cannabinoid products may have the potential to treat a number of neuropathic pain indications more safely and effectively than that of traditional cannabinoid products and current natural health and drug treatments for these indications.

Revive's proposed transdermal cannabinoid products will also expand use in additional pain disorders in the future.

Inflammatory skin disorders

Inflammatory skin disorders are the results of immune system reactions that involve the skin. Psoriasis is a chronic inflammatory skin disease that affects approximately 7.5 million people in the US. The disease is characterized by an errant immune-system response that drives inflammation and thickening of the skin caused by rapid turnover of skin cells. Psoriasis and other inflammatory skin diseases such as atopic dermatitis can cause tremendous discomfort. The healthcare market has seen an increase in the introduction of systemic therapies, including biologics, to treat patients with moderate-to-severe psoriasis and atopic dermatitis. For the majority of affected patients with less severe disease burden, topical corticosteroids are the predominant therapies prescribed. None of the currently approved therapies are without side effects, and none are well-suited for chronic use. Currently, in the United States, psoriasis is a $5 billion market, of which 90% are from drugs targeting moderate to severe psoriasis patients where the skin manifestation affects more than 3% of the body.

Revive's proposed transdermal cannabinoid products may have the potential to treat a number of inflammatory skin disorders more safely and effectively than that of traditional cannabinoid products and current natural health and drug treatments for these indications.

Revive's proposed transdermal cannabinoid products may also be explored for additional inflammatory skin disorders and wound healing indications in the future.

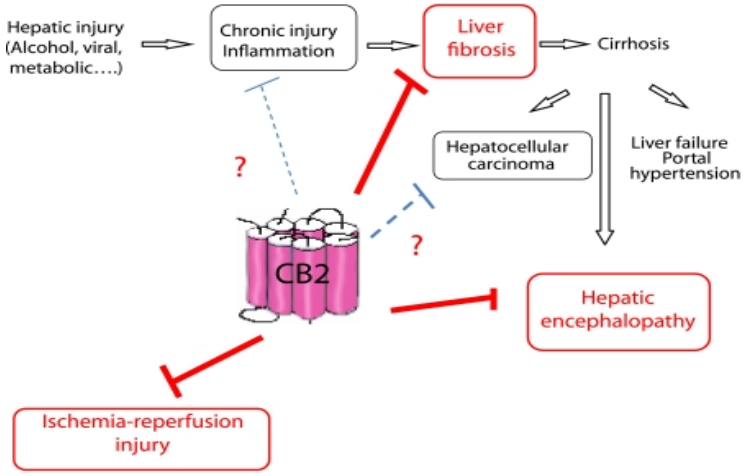
Liver diseases

Liver disease is described by irregular functioning of liver, causing disorders like hepatitis, fatty liver, and cirrhosis. There are over 100 described diseases of the liver affecting at least 30 million people alone in the U.S. A number of factors are driving the liver disease treatment market, which include rapidly changing lifestyle patterns such as increasing alcohol consumption, unhealthy diets, and increasing prevalence of liver diseases. Liver diseases can result from injury to the liver caused by hepatitis C virus (HCV), hepatitis B virus (HBV), obesity, chronic excessive alcohol use, or autoimmune diseases. Major drug categories used in the treatment of liver diseases includes anti-rejection drugs, vaccines, immunosuppressant, chemotherapy drugs, and antiviral drugs. According to Allied Market Research, titled, "World Liver Disease Treatment Market - Opportunities and Forecast, 2014 - 2022", the global market for liver disease treatment is projected to reach $19.5 billion by 2022.

The Company is in the research and development of next generation or novel uses of cannabinoids for the treatment of a variety of liver diseases. The Company adopted a bioinformatics approach that was undertaken by a third-party research organization, which provided an overview of the diseases treated by cannabinoids. The analysis of the output did provide insight into potential liver targets. The results indicate

the use of CB_1 receptor antagonists for several liver indications (i.e. Fatty liver). These results lead to a literature investigation into cannabinoids and their potential application in liver diseases, which is presented below, followed by the proposed experimental approach (pre-clinical).

Recent data have unraveled a key role of CB_2 receptors during chronic and acute liver injury, including fibrogenesis associated to chronic liver diseases, ischemia-reperfusion (I/R)-induced liver injury, and hepatic encephalopathy associated to acute liver failure. It has recently been shown that hepatic CB_2 receptors are highly upregulated in several pathological conditions. Overall, the figure below indicates CB_2 as a target for following liver indications: fibrosis, I/R-induced injury, and hepatic encephalopathy.



The Company has compiled a detailed literature review to support cannabinoids for a variety of liver diseases.

Research suggests that CB_2 agonists have demonstrated to protect against liver I/R injury. Early evidence indicates that a single ultralow dose THC can reduce the apoptotic, oxidative, and inflammatory injury induced by hepatic I/R injury. THC may serve as a potential target for therapeutic intervention in hepatic I/R injury during liver transplantation, liver resection, and trauma. There is a separate report indicating that the cannabinoid, $^{\Delta}8$-Tetrahydrocannabivarin, prevents hepatic ischemia/reperfusion injury by decreasing oxidative stress and inflammatory responses through cannabinoid CB_2 receptors. $^{\Delta}8$-Tetrahydrocannabivarin activated CB_2 receptors *in vitro*, and decreased tissue injury and inflammation *in vivo*, associated with I/R partly via CB_2 receptor activation. Research has also indicated that the non-psychoactive cannabinoid, cannabidiol, protects against hepatic ischemia/reperfusion injury by attenuating inflammatory signaling and response, oxidative/nitrative stress, and cell death. CBD significantly reduced the extent of liver inflammation, oxidative/nitrative stress, and cell death and also attenuated the bacterial endotoxin-triggered NF-κB activation and TNF-α production in isolated Kupffer cells, likewise the adhesion molecule expression in primary human liver sinusoidal endothelial cells stimulated with TNF-α and attachment of human neutrophils to the activated endothelium. Thus, CBD may represent a novel, protective strategy against I/R injury by attenuating key inflammatory pathways and oxidative/nitrative tissue injury, independent of classical $CB_1/_2$ receptors. These results emphasize that CBD represents a potential therapeutic option to protect the liver against hypoxia-reoxygenation injury. The available data suggest that CB_2 agonists may offer novel perspectives in prevention of hepatic I/R injury. CB_2 receptor mediates protection against hepatic ischemia/reperfusion injury. Potentially targeting the CB_2 receptor may represent a novel protective strategy against I/R injury.

Based on research CB_2 agonists have demonstrated potential for alcoholic steatohepatitis. β-caryophyllene (BCP), a CB_2 receptor agonist, also known as the "dietary cannabinoid / phytocannabinoid," has been demonstrated to protect against alcoholic steatohepatitis by attenuating inflammation and metabolic

dysregulation in mice. Given the safety of BCP in humans, this food additive has a high translational potential in treating or preventing hepatic injury associated with oxidative stress, inflammation, and steatosis. Given the excellent safety profile of BCP in humans, it has tremendous therapeutic potential in a multitude of diseases associated with inflammation and oxidative stress, even those outside of the liver indication. Chronic treatment with BCP attenuated the chronic and binge alcohol-induced liver injury and inflammation by attenuating the pro-inflammatory phenotypic M1 switch of Kupffer cells and by decreasing the expression of vascular adhesion molecules ICAM-1, E-Selectin, and P-Selectin, as well as the neutrophil infiltration. The protective effects of BCP against alcohol-induced liver injury were attenuated in CB_2 knockout mice, indicating that the beneficial effects of this natural product in liver injury involve CB_2 receptor activation. In a separate study, (BCP) was used to investigate the role of the CB_2 receptors in mediating alcohol intake and ethanol-induced conditioned place preference (EtOH-CPP) and sensitivity in mice. The results indicated that BCP dose-dependently reduced alcohol consumption and preference. Overall, the CB_2 receptor system appears to be involved in alcohol dependence and sensitivity and may represent a potential pharmacological target for the treatment of alcoholism. These data identify CB_2 agonists as potential therapeutic agents for the management of alcoholic liver disease and identify the CB_2 receptor as a potential therapeutic target. In summary, BCP represents untapped compound potential from a therapeutic perspective, has demonstrated safety profiles in humans, and there is minimal competition to date in terms of investigation and commercialization. There is an opportunity to formulate this, synthesize analogues, and investigate clinical efficacy. This compound is of particular interest as it is a CB_2 agonist, not psychoactive, and is referred to in the literature as a "dietary cannabinoid." The chemical structure is significantly different compared to the cannabinoid structure class as whole.

Research has also suggested that cannabinoids have shown potential for non-alcoholic fatty liver disease (NAFLD). A study in 2015 investigating two non-psychoactive cannabinoids, $^{\Delta}$9-Tetrahydrocannabivarin (THCV) and CBD, as potential therapeutics to for NAFLD. The result of this study, from *in vitro and in vivo models,* demonstrated that both THCV and CBD directly reduced accumulated lipid levels *in vitro* in a hepatosteatosis model and adipocytes.

Based on previous research CB_2 agonists have shown potential for liver injury and regeneration. A study in the literature that has previously investigated the impact of CB_2 receptors on the regenerative process associated with liver injury using JWH133, a CB_2 synthetic CB_2 receptor agonist. These results suggested that CB_2 agonists display potent hepatoprotective properties, in addition to their antifibrogenic effects. CB_2 receptors reduce liver injury and promote liver regeneration following acute insult, via distinct paracrine mechanisms involving hepatic myofibroblasts.

Research also suggests that cannabis' anti-inflammatory and protective properties help in the treatment of hepatitis. One study found that cannabinoids' anti-inflammatory properties effectively reduced inflammation of a damaged liver and researchers therefore suggested that cannabis could be developed as a potential drug for hepatitis (Lavon, et al., 2003). Another study found that cannabinoids appeared have immunosuppressive and profibrogenic effects in patients with chronic hepatitis C.

Research and Development Programs in Liver Diseases

The Company completed a research discovery program of cannabinoid-based therapeutics targeting liver diseases. The research studies, including in vitro and in vitro pharmacology, are being conducted by PhytoSciences Consulting LLC, a contract research organization in Louisville, Kentucky. The investigation was overseen by academic scientists with over 20 years' experience with expertise in liver disease research. The research program employed an *in vivo* compound screening approach to investigate phytocannabinoids in a fibrosis model utilizing an in-house cell-based screening model. The cell-based ligand screening is a targeted experimental approach that involved approximately eighty phytocannabinoids. The initial screen of phytocannabinoids resulted in the identification of several promising hits, which demonstrated to be effective at preventing the activation of the cells by Transforming growth factor-beta (TGF-β), thus serving as potential therapeutics for liver fibrogenesis. In the pathological

process of liver fibrosis, TGF-β plays as a master profibrogenic cytokine in promoting activation and myofibroblastic differentiation of hepatic stellate cells, a central event in liver fibrogenesis. Continuous and/or persistent TGF-β signalling induces sustained production of the extracellular matrix components and of tissue inhibitor of metalloproteinase synthesis. Therefore, the regulation of locally activated TGF-β levels is increasingly recognized as a therapeutic target for liver fibrogenesis. The results of the Company's research efforts demonstrate that the ligands in question may serve as a novel treatment for liver fibrogenesis and warrant further investigation in animal models. Based on the results of the compound screen, the Company is investigating a number of pre-clinical studies options for specific liver diseases. Future experiments may investigate cannabinoids as potential therapeutics for the following liver indications: Liver regeneration, alcoholism, alcoholic steatohepatitis, liver inflammation, liver fibrosis, and non-alcoholic fatty liver disease. The overall objective of these studies is to identify cannabinoids for the potential treatments of a number of well-known and rare diseases that the Company may potentially advance to further pre-clinical and human clinical research and partner with companies with a focus on liver diseases and specialty cannabinoid treatments.

The Company entered into a license agreement with the South Carolina Research Foundation ("SCRF"), under which Revive acquired an exclusive license from SCRF to develop and commercialize a portfolio of patents based on cannabinoid-based therapeutics, such as cannabidiol, in the treatment of autoimmune hepatitis, a rare liver disease. Liver disease is a major cause of morbidity and mortality and the prognosis is often poor. In many liver diseases (such as viral hepatitis, autoimmune hepatitis and alcoholic liver disease), activated T lymphocytes and macrophages appear to play an important role in liver damage. Autoimmune hepatitis is an inflammatory liver disease characterized by the presence of high transaminases, circulating autoantibodies, hypergammaglobulinemia, histological evidence of hepatitis, and responsiveness to immunosuppressive treatment. The ten year survival rate in untreated patients is approximately 10%. The two known types of autoimmune hepatitis (type I and type II) are treated with corticosteroids such as prednisone as well as other immunosuppressive drugs such as azathioprine, mycophenylate mofetil, cyclosporine or tacrolimus. Patients who progress to end stage live disease and/or cirrhosis may also need a liver transplant. Therefore, alternative treatment options are needed. Therapeutic approaches that either inhibit immune-mediated mechanisms or directly inhibit liver cell damage show promise. These studies have addressed the mechanism underlying the use of CAM therapy in ameliorating hepatitis and liver damage. While extensive studies have been performed to elucidate the mechanism of viral hepatitis, there is paucity of information on the pathogenesis of autoimmune hepatitis and a dire need for the development of CAM therapy to treat such patients. The Company is investigating the process of conducting further research and development work with CBD in relevant autoimmune hepatitis animal models. The overall objective is to support CBD for the potential treatment of autoimmune hepatitis that the Company may potentially advance to further pre-clinical and human clinical research and partner with companies with a focus on liver diseases and specialty cannabinoid treatments. The Company was granted orphan drug designation for CBD in the treatment of autoimmune hepatitis by the FDA.

The Company entered into a research collaboration with Sanyal Biotechnology LLC ("SanyalBio") focused on advancing cannabinoids for the potential treatment of liver diseases. The collaboration will initially focus on the use of CBD on a novel autoimmune hepatitis model based on the DIAMOND™ model designed and developed by SanyalBio specifically for Revive. This research collaboration is expected to generate a better model of autoimmune hepatitis which will enable SanyalBio to further advance the research of cannabinoids for the treatment of AIH and other liver diseases, and the research will provide meaningful information to support future clinical research and partnering discussions for Revive.

The Company submitted an application to the FDA seeking orphan drug designation of CBD for the treatment of hepatic ischemia and reperfusion injury ("IRI") during liver transplantation. The application resulted in the FDA granted orphan drug designation for CBD in the prevention of IRI resulting from solid organ transplantation. According to the U.S. Organ Procurement and Transplantation Network, there are approximately 115,000 patients waiting for solid organ transplants in the United States, with the four most common organs transplanted being liver, kidney, heart and lung. IRI in organ transplantation can result in

a higher incidence of acute and chronic rejection, as well as long-term morbidity and mortality. Quickly restoring blood supply of ischemic organs as soon as possible is crucial for avoiding or reducing injury from ischemia, whereas strategies used to attenuate the damage induced by reperfusion, including ischemic preconditioning, ischemic postconditioning, and machine perfusion. These strategies are expensive, sometimes hard to perform in clinical surgeries, and difficult in maintaining organ functions in the case of acute injuries. With the shortage of organs and expensive medical strategies, it is clear that therapies need to be researched to optimize the quality of the organs that are available and to attenuate injury to transplanted organs. Revive believes that the immunosuppressant and anti-inflammatory protective effects of CBD may provide a novel, more beneficial strategy to attenuate the damage induced by ischemia and reperfusion during solid organ transplantation.

Liver ischemia-reperfusion injury is a major complication of liver transplantation and is one of the leading causes for post-surgery hepatic dysfunction leading to an increased risk of postoperative morbidity and mortality. According to the United Network for Organ Sharing ("UNOS") there have been 160,722 liver transplants performed between January 1, 1988 and July 30, 2018. Currently there are 13,773 individuals on the waiting list for a liver transplant. Quickly restoring blood supply of ischemic liver as soon as possible is crucial for avoiding or reducing injury from ischemia, whereas strategies used to attenuate the damage induced by reperfusion, including ischemic preconditioning, ischemic postconditioning, and machine perfusion. These strategies are expensive, sometimes hard to perform in clinical surgeries, and difficult in maintaining liver functions in the case of acute injuries. The Company believes that the immunosuppressant and anti-inflammatory protective effects of CBD may provide a novel, more beneficial strategy to attenuate the damage induced by ischemia and reperfusion during liver transplantation.

Bucillamine

Bucillamine is a disease-modifying anti-rheumatic drug, which is prescribed for rheumatoid arthritis in Japan and South Korea. We are repurposing bucillamine as a potential new treatment for gout and cystinuria.

Material Transfer Agreement

Based on animal study results, we focused on advancing the clinical development of bucillamine for the treatment of acute gout flares. We entered into a material transfer agreement ("MTA") with the developer of bucillamine. Pursuant to the MTA, we would be able obtain access to proprietary and confidential information (i.e. non-clinical data, clinical data, manufacturing information) and clinical trial supply of the drug bucillamine for the phase 2a and phase 2b human clinical studies of bucillamine for the treatment of acute gout flares and cystinuria. In return, the developer of bucillamine will have exclusive commercialization rights in Japan, Korea, and Taiwan, and we will have exclusive commercialization rights in the rest of the world.

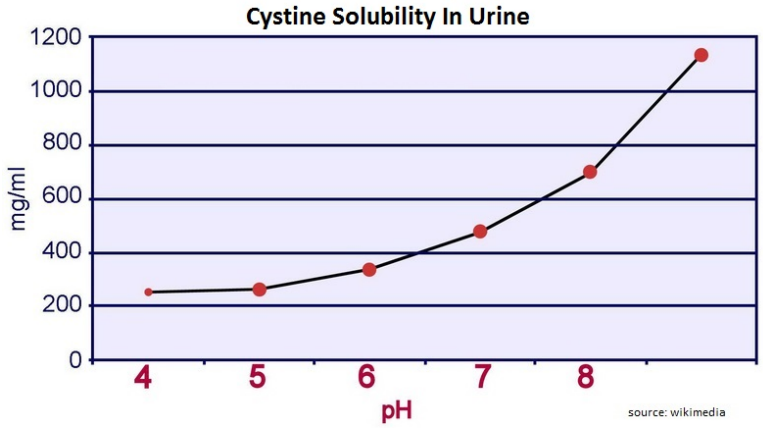
Cystinuria

Cystinuria is a rare autosomal recessive genetic disorder that causes high levels of cystine in the urine thus causing kidney stones to form. The resulting kidney stones are often large and recurrent and lead to significant morbidity and sometimes loss of kidney function. The important clinical manifestation of the disease is a build-up of cystine in the urine, which in turn results in crystallization and stone formation in the kidneys and bladder. In healthy individuals, most cystine dissolves and returns to the bloodstream after entering the kidneys. People with cystinuria have the aforementioned genetic defects that interfere with this process. No curative treatment of cystinuria exists, and typically patients have a lifelong risk of stone formation, repeated surgery, and impaired renal function. There are approximately between 10,000 and 12,000 patients affected with cystinuria in the U.S. The worldwide prevalence is about 1 in 7,000.

Therapy to reduce stone formation focuses on lowering urine cystine concentration and increasing cystine solubility. Cystine is poorly soluble in urine and prone to crystallization and stone formation at

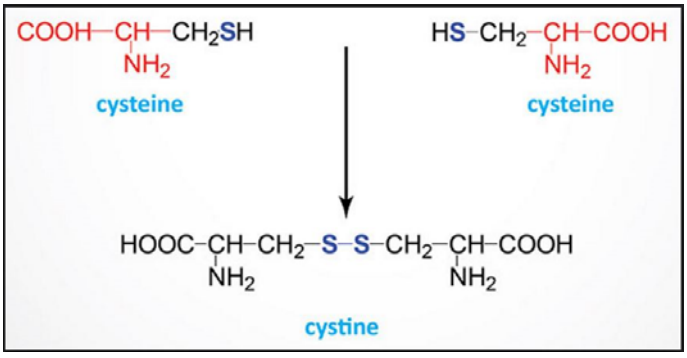
concentrations above 300 mg/l. As such, the primary non-pharmacological intervention for preventing cystine stones is to increase fluid intake. Patients with cystinuria are recommended to drink at least three liters of fluid a day (equivalent of ten 10 oz. glasses of water).

The solubility of cystine is also highly dependent on pH. At physiological pH (~7) maximum cystine solubility is between 200 and 400 mg/l. Acidic urine (pH of 5) greatly reduces the solubility to below 250 mg/l; however, at pH greater than 7.5 the solubility increases exponentially. In fact, the solubility of cystine doubles to 500 mg/l at pH 7.5. Unfortunately, excessive alkali therapy is not advisable. When urinary pH increases above 7.0 with alkali therapy, the complication of calcium phosphate nephrolithiasis may ensue because of the enhanced urinary supersaturation of hydroxyapatite in an alkaline environment.



Increased fluid intake and alkali therapy are not always feasible or effective. In fact, work published by researchers from Duke University found that therapeutic success with these more conservative approaches, defined as a urine cystine concentration below 300 mg/l, was achieved by only 15% of patients treated at the University Medical Center over an eight-year period. For patients that cannot reduce stone formation on these conservative programs, pharmaceutical intervention is recommended. The two leading pharmaceutical products for the treatment of cystinuria are Retrophin's Thiola® (tiopronin) and Valeant's Cuprimine® (d-penicillamine).

Penicillamine is a first-line chelating agent use for the removal of excess copper in patients with Wilson's disease and to reduce excess cystine in patients with cystinuria. The mechanism of action for cystine reduction is by disulfide interchange between d-penicillamine and cystine, resulting in the formation of penicillamine-cysteine disulfide, a substance that is much more soluble than cystine and readily excreted. Cystine is a combination of two cysteine (cys) amino acids whose thiol side chains have been oxidized to form cystine.



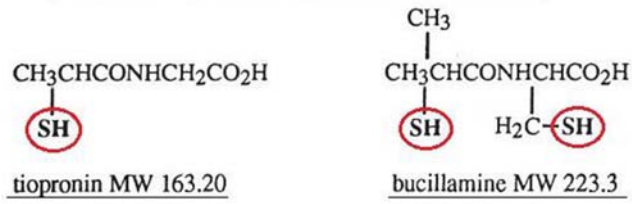
Cystine is far less soluble than cysteine and thus creates problems at urine concentrations above 300 mg/l. Penicillamine competes with excess cysteine to form penicillamine-cysteine disulfide, a far more soluble compound (roughly 50x more so) than cystine. Penicillamine also deprotonates cystine to form penicillamine-cysteine disulfide. The drug is highly effect in the treatment of cystinuria but has poor tolerability and serious safety concerns. The use of penicillamine has been associated with fatalities due to certain diseases such as aplastic anemia, agranulocytosis, thrombocytopenia, Goodpasture's syndrome, and myasthenia gravis. The incidence of adverse events ranges between 30% and 60%.

Tiopronin received FDA approval in 1988 for the prevention of cystine stone formation in patients with severe homozygous cystinuria with urinary cystine greater than 500 mg/day, who are resistant to treatment with conservative measures of high fluid intake, alkali and diet modification, or who have adverse reactions to penicillamine. Tiopronin has similar efficacy and mechanism of action to penicillamine. Tiopronin is an active reducing agent which undergoes thiol-disulfide exchange with cystine to form a mixed disulfide of tiopronin-cysteine. The drug is ideal for patients with allergic reactions or intolerability to penicillamine and considered to be the most tolerable of the two drugs.

Tiopronin has serious side effects including aplastic anemia, agranulocytosis, thrombocytopenia, Goodpasture's syndrome or myasthenia gravis. Patients on the drug should have peripheral blood counts, platelet counts, hemoglobin, serum albumin, and urinary protein levels checked on a regular basis. Patients are also advised to have liver function tests and abdominal roentgenograms on a yearly basis.

Rationale of bucillamine for cystinuria

Chemical structure of tiopronin and bucillamine

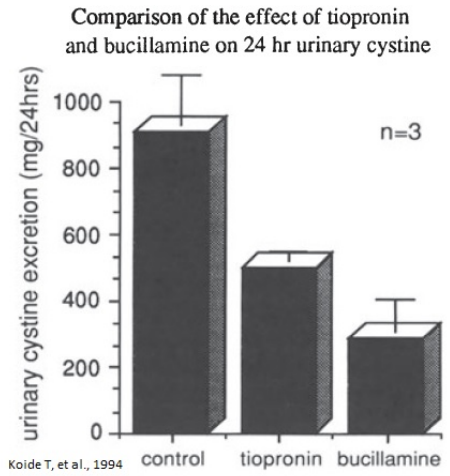


tiopronin MW 163.20 bucillamine MW 223.3

As noted above, bucillamine has been used in Japan and Korea for decades in the majority of cases for the treatment of rheumatoid arthritis. Researchers out of Osaka University School of Medicine conducted *in vitro* and *in vivo* studies during the early 1990s that provide excellent proof-of-concept of bucillamine for the treatment of cystinuria.

In vitro study: The effects of bucillamine compared to tiopronin was tested in whole urine by adding l-cystine at a concentration of 500 µg/mL along with half and equal concentrations of the two study drugs. Results show that the concentration of cystine was markedly reduced by both tiopronin and bucillamine due to the formation of cysteine-tiopronin or cysteine-bucillamine; however, the relative activity of bucillamine was 5 to 12% stronger than that of tiopronin and calculated the relative molecular activity of bucillamine was approximately 40 to 50% stronger than that of tiopronin. In other words, the data shows bucillamine dissolved urinary cystine much more effectively than tiopronin at the same molecular weight and a little more effectively than tiopronin at the same drug concentration.

In vivo study: Japanese researchers then tested bucillamine and tiopronin in three patients with confirmed cystinuria in a controlled, two-way, cross-over, wash-out design study of identical doses of each drug. The effectiveness of bucillamine was compared with tiopronin by analyzing the 24-hour urine samples under three different conditions: control, bucillamine, and tiopronin. The data show both bucillamine and tiopronin were effective in reducing urinary cystine concentration at 24 hours but that bucillamine was statistically superior (markedly superior in two patients and slightly superior in the third).



Although a small study, the work by Koide T., et al., 1994 does provide proof-of-concept for Revive in the planned Phase 2 study. The authors concluded, "Bucillamine can dissolve cystine approximately twice as effective as tiopronin at the same mg amount."

Based on these exploratory results, the information regarding bucillamine, whereby bucillamine has a chemical structure similar to Thiola®, but has two active thiol groups versus only one for Thiola®, and the MTA we have in place for bucillamine, we focused on advancing the clinical development of bucillamine for the treatment of cystinuria. We believe that bucillamine may offer patients a safer, more effective treatment option than either of the two monothiol drugs, tiopronin or d-penicillamine. Theoretically, bucillamine should be twice as effective as tiopronin at the same concentration or equally as effective at lower concentrations, potentially making the drug more tolerable to patients.

Clinical status

On July 6, 2016, we obtained acceptance of our Investigational New Drug Application (IND) from the FDA to commence the Phase 2 clinical trial for bucillamine for the treatment of cystinuria. The Phase 2 clinical trial is a multi-center, dose escalation trial to assess the safety and effectiveness of bucillamine on urinary cystine excretion and cystine capacity in patients with cystinuria. The primary outcome measures are the incidence of treatment-emergent adverse events along with secondary outcome measuring 24-hr urine cysteine excretion and 24-hour urine cystine capacity, i.e., the capacity of a patient's urine to solubilize or precipitate. The study plans to enroll up to 30 subjects in at least 5 clinical sites in the U.S. We initiated the U.S. Phase 2 clinical study in February 2017. We are currently seeking development and commercialization partners to advance the program.

Future Non-clinical and Clinical Studies

Based on the Phase 2 study results we may submit for an end-of-Phase 2 meeting with the FDA to discuss a Phase 3 study, additional human clinical studies, and non-clinical studies that the FDA may require us to perform prior to submitting the new drug application for commercial approval in the U.S.

Market exclusivity

On October 26, 2015 we announced that the Office of Orphan Products Development of the U.S. Food and Drug Administration has granted orphan designation status for the use of bucillamine for the treatment of cystinuria. Orphan drug designation is granted to therapeutics treating rare diseases affecting less than 200,000 people in the U.S. The orphan drug designation qualifies the Company for various incentives such

as a seven-year period of marketing exclusivity in the U.S., the potential for expedited drug development, and opportunities for drug grants and assistance in clinical research study design from the U.S. FDA.

Gout

There were 14.3 million diagnosed prevalent cases of chronic gout in the major pharmaceutical markets in 2012, which is forecast to increase to 17.7 million by 2021 (Source: *Decision Resources 2012*). Gout in the U.S. affects approximately 8.3 million (~3.9%) American adults (Source: *Arthritis Rheum. 2011 Oct; 63(10):3136-41*). It is estimated that the gout disease treatment market value will increase from $989 million in 2013 to $2.28 billion by 2018 (Source: *GlobalData 2014*). Gout is a painful disorder caused by elevated serum uric acid (sUA) in the body due to under excretion of uric acid and/or over production of uric acid. Most patients on the most commonly employed regimens for uric acid lowering fail to achieve a satisfactory serum urate level. Poor control of gout can lead to acute attacks of severe pain, and chronic joint damage and impairment of health related quality of life. Accordingly, there are needs in the market for new therapies to control gouty inflammation and hyperuricemia.

Although gout is a treatable condition, there are limited treatment options, many of which have adverse side effects. Drug treatment for gout includes anti-inflammatory agents (non-steroidal anti-inflammatories (NSAIDs), corticosteroids, Colchicine) and serum urate-lowering therapies, which work by lowering body stores of uric acid. Treatment of gouty inflammation is complicated by the fact that gout patients have a high incidence of cardiovascular and metabolic comorbidities. Common comorbidities include hypertension (70-80%), coronary artery disease (>30-40%), chronic kidney disease (~30-50%), diabetes (~25-40%), gastrointestinal tract diseases, and congestive heart failure (Source: *Keenan, RT et. al., Prevalence of contraindications and prescription of pharmacologic therapies for gout. Am. J. Med. 2011, 124: 155-163*). Managing patients with these comorbidities is challenging because the majority of them have contraindication for one or more first-line approved medications to treat acute gout. Current drug therapy limitations include: 90% of gout patients having at least one contraindication to NSAIDs and glucocorticoids; and 50% to 66% having at least one contraindication to Colchicine. Moreover, corticosteroids can cause hypertension and worsening of blood sugar, and NSAIDs have substantial renal and cardiovascular toxicity.

Rationale of bucillamine for gout

Gout is a common disorder characterized by accumulation of excess body stores of uric acid, and by acute inflammatory attacks of arthritis, and in some patients a chronic destructive arthritis, stimulated by crystalline deposits of the sodium salt of uric acid (monosodium urate) in joint tissues. Bucillamine is a thiol donor derived from the amino acid cysteine, and is similar to N-acetylcysteine and N-2-mercaptopropionyl glycine. *(Source: Proc. Natl. Acad. Sci. USA 2002, 99: 8915-8920; J. Immunol. 2002, 168: 2560-2567*). However, relative to these comparators, bucillamine contains two donatable thiol groups rather than one. It is therefore a considerably more potent inhibitor of certain oxidative stress-triggered cell signaling events that promote acute and chronic inflammation, and are implicated in the painful arthritis of acute gout flares. *(Source: J. Immunol. 2000, 165: 2703—2711; J. Cardiovasc. Pharmacol. 2001, 38: 859-867; Cardiovasc. Drug Rev. 2003, 21: 77-90*).

In addition to its direct action on oxidative stress-induced inflammation signaling, bucillamine acts to stimulate the cellular production of proteins that can regulate the level of uric acid excretion by the kidney, and thereby, their capacity to lower the serum level of uric acid. It does so by increasing the activity of Nuclear factor (erythroid-derived 2)-like 2 (Nrf2), a transcription factor which promotes expression of the urate transporter protein, ATP-binding cassette sub-family G member 2 (ABCG2), which in turn enables uric acid excretion. *(Source: Biochem. Pharmacol. 2006, 72: 455-462*; *Drug Metab. Dispos. 2006, 34: 1756-1763).* The physiological importance of ABCG2 in humans is illustrated by the large differences in uric acid levels and the prevalence of gout caused by genetic variation in ABCG2. It is therefore a potential target for new uricosuric agents in the treatment of gout *(Source: Proc. Natl. Acad. Sci. USA. 2009, 106: 10338-10342; Sci. Transl. Med. 2009, 1: 5ra11).* A third mechanism by which bucillamine could potentially affect

serum uric acid levels in gout involves another uric acid excretion protein, ATP-binding cassette sub-family C member 4 (ABCC4), which is present in the kidney. Expression of ABCC4 also is promoted by Nrf2. (Source: *J. Pharmacol. Exp. Ther. 2010,* 335: *2-12)*

Based on these studies, it was hypothesized that a combination of allopurinol and an Nrf2 activator such as bucillamine may have a synergistic effect in lowering uric acid levels, and that such a combination therapy including primary anti-inflammatory effects with potential secondary uric acid-lowering effects would offer new, more-effective options for gout treatment than other therapies that are currently available.

Pre-clinical research of bucillamine for gout

The unpublished animal studies, which served as part of the bucillamine patent for gout, show that:

1. Bucillamine had a highly significant ($p < 0.001$) dose-response effect on monosodium urate crystal-induced release of interleukin-1beta from inflammatory white blood cells *in vitro.* Interleukin-1beta is a principal driving factor for gouty inflammation *in vivo*.

2. Bucillamine had a highly significant ($p < 0.001$) dose-response effect on monosodium urate crystal-induced peritoneal inflammation *in vivo*, which decreased mean neutrophil influx by 5.15% for every increase of 1 µmol/kg of the drug. Neutrophils are a type of inflammatory white blood cell; a reduction in their influx denotes a reduction in inflammation.

3. The effects of the administration of bucillamine and colchicine on monosodium urate-induced peritoneal inflammation was found such that the addition of bucillamine (10 µmol/kg) produced a highly significant ($p < 0.001$) decrease in average neutrophil influx. In addition, there was an interactive relationship between Bucillamine and colchicine such that the addition of bucillamine enhanced the dose-response effect so that there was a decrease of 32.2% for every increase of 1 µmo1/kg of colchicine.

4. There was a significant ($p = 0.012$) interactive effect between bucillamine and allopurinol on serum and urinary levels of uric acid in a small animal model of elevated uric acid (hyperuricemia). The addition of allopurinol (5mg/kg/day) increased the dose-response effect of bucillamine so that each increase of 1 mg/kg/day of REV-002 resulted in a decrease of 0.0010 mg/dL in the serum urate concentration.

5. There was a highly significant ($p < 0.001$) interactive effect between allopurinol and bucillamine on the urinary excretion of uric acid in a small animal model of hyperuricemia. The addition of allopurinol (5mg/kg/day) increased the dose-response effect of bucillamine such that each increase of 1 mg/kg/day of bucillamine resulted in an increase of 0.171 mg/dL in the urinary uric acid concentration.

Bucillamine is an established anti-inflammatory agent in rheumatoid arthritis that inhibits the capacity of monosodium urate crystals to provoke inflammation. This suggests the potential for bucillamine to be an effective first line anti-inflammatory drug in the management of acute gouty arthritis flares. Additionally, the synergistic effect of bucillamine with colchicine on monosodium urate crystal-induced inflammation, demonstrated in small animal studies *in vivo*, suggests potential efficacy as an add-on or second line agent in combination therapy for acute gouty arthritis with colchicine and other agents. The animal study also demonstrated that bucillamine has a synergistic effect in combination with allopurinol in lowering sUA concentrations in a small animal model of hyperuricemia. The potential uricosuric effect of bucillamine, particularly when used in conjunction with allopurinol, suggests that bucillamine could provide a means to treat gout more effectively than other therapies that are currently available, via combination of primary anti-inflammatory effects with potential secondary uric acid lowering effects.

Clinical Status

On October 2014, we obtained acceptance of our IND from the FDA to commence the Phase 2a clinical trial for bucillamine for the treatment of acute gout flares in the U.S. The Phase 2a study was an open-label, multicenter, active-controlled, parallel-group clinical trial designed to evaluate the safety and efficacy of two arms of bucillamine 100mg tablet compared with the active comparator colchicine (dosed acutely using the FDA-approved regimen) in the treatment of subjects with acute gout flares over a seven-day treatment period. A total of 20 clinical sites in the United States participated in the study and a total of 74 subjects who are confirmed with a qualifying severe gout flare attack were randomized into the study. Subjects were randomized in a 1:1:1 allocation ratio to either Arm A (oral bucillamine - total of 900mg), Arm B (oral bucillamine - total of 1,800mg) or Arm C (oral Colchicine - total of 1.8mg) over a seven-day treatment period.

The primary efficacy endpoint is the proportion of patients who responded to treatment. Treatment responders are defined as a $\geqslant$ 50% reduction in target joint pain score from baseline at 72 hours post-dose without using rescue drug. The target joint pain score is an 11-point Pain Intensity Numeric Rating Scale (PI-NRS) used to assess joint pain intensity while experiencing a gout flare on a scale from 0 (no pain) to 10 (worst possible pain). The PI-NRS is completed using a diary where the subject is required to circle the most appropriate number that best describes their level of pain in the identified target joint during specific time points.

The objective of the Phase 2a study was to evaluate the safety and tolerability, and the efficacy of two regimens of oral bucillamine over seven days of treatment compared with colchicine (Colcrys®) in the treatment of subjects with severe gout flare attack. The primary efficacy endpoint is the proportion of patients who responded to treatment defined as a $\geqslant$ 50% reduction in target joint pain score from baseline at 72 hours post-dose without using rescue drug.

The final primary endpoint results from the Phase 2a study from a total of 74 subjects that had completed the seven-day treatment period are as follows:

- In Arm A (oral Bucillamine - total of 900mg over 7 days), 55% (12/22 subjects) had a ≥ 50% reduction in target joint pain score from baseline at 72 hours post-dose without using rescue drug;
- In Arm B (oral Bucillamine - total of 1,800mg over 7 days), 46% (11/24 subjects) had a ≥ 50% reduction in target joint pain score from baseline at 72 hours post-dose without using rescue drug;
- In Arm C, the active comparator arm, (oral Colchicine - 1.8mg over 1 hour), 46% (13/28 subjects) had a ≥ 50% reduction in target joint pain score from baseline at 72 hours post-dose without using rescue drug; and
- Bucillamine was well tolerated and there were no serious adverse events reported in subjects taking bucillamine.

Overall, these exploratory results demonstrate that bucillamine has a signal of efficacy similar to that observed with the comparator drug, colchicine (Colcrys®), in this clinical study, which has been previously approved for this indication in the U.S.

Future Non-clinical and Clinical Studies

Based on the Phase 2a study results, we designed a Phase 2b, adequate and well-controlled, multicenter, double blinded, placebo controlled trial and submitted the Phase 2b protocol to the FDA. The FDA has accepted the Phase 2b protocol and we are able to proceed with the study. Once we complete the Phase 2b study and if the results are positive we will submit for an end-of-Phase 2 meeting with the FDA to discuss Phase 3 study plans, additional human clinical studies, and any non-clinical studies that the FDA may require us to perform prior to submitting the new drug application for commercial approval in the U.S. We are currently seeking development and commercialization partners to advance the program.

Intellectual Property

On June 2013, we were assigned the rights to the patent application No. AU2012905072 from Xenexus Pharmaceuticals Pty, which was replaced by U.S. patent No. 9,238,018, titled 'The Use of Bucillamine in the Treatment of Gout' which was then subsequently replaced by U.S. patent No. 9,662,305 and expires in late 2033.

Other Development Programs

The following chart summarizes the Company's product candidates, including the principal disease or indication being targeted, clinical trial status, expected milestones and marketing rights for each program:

Program	Status	Next Milestone	Spent	Estimated Cost to Complete (2019)	Marketing Rights
Cannabinoids for Liver Diseases	Signed Exclusive License Agreement with South Carolina Research Foundation Initiated research study with SanyalBio	Initiate research in various research models of liver diseases Complete research study of CBD in autoimmune hepatitis animal model	$nil was spent during the three months ended September 30, 2018	$100,000	Worldwide
Cannabinoid Delivery Technology	Signed Exclusive License Agreement with Wisconsin Alumni Research Foundation Completed sponsored research with University of Wisconsin-Madison	Conduct research and development of formulations Conduct research studies in various disease models	$nil was spent during the three months ended September 30, 2018	$100,000	Worldwide
Cannabinoid Products	Signed Exclusive Distribution and License Agreement with AXIM Biotechnologies Inc. for hemp-based chewing gum	Regulatory approval to market in Canada (expected in December 2018) Commercialization in Canada (expected in December 2018)	$15,000 was spent during the three months ended September 30, 2018	$85,000	Canada

Program	Status	Next Milestone	Spent	Estimated Cost to Complete (2019)	Marketing Rights
REV-002: Bucillamine for treatment of acute gout flares	Phase 2a human proof of concept study completed; Phase 2a human proof of concept study close out procedures ongoing; FDA allowed for Phase 2b study to proceed.	Close out Phase 2a human proof of concept study (expected by December 2018) Budget beyond 2018 will be determined after a partner via out-licensing or acquisition is completed Partner via out-licensing or acquisition or continue clinical development (date of completion is undetermined)	Approximately $1,000 was spent during the three months ended September 30, 2018	$54,000	Revive (Rest of world) / MTACo (Japan, Korea, Taiwan)
REV-004: Bucillamine for treatment of cystinuria	IND application accepted by the FDA; Initiated Phase 2a human proof of concept study	Complete first-half of study or decision to continue Phase 2a human proof of concept study (expected December 2018) Partner via out-licensing or acquisition or continue clinical development (date of completion is undetermined)	Spent approximately $3,000 during the three months end September 30, 2018	$43,000	7-year US marketing exclusivity based on orphan drug designation that was awarded by the FDA

Operations Highlights

During the three months ended September 30, 2018, the Company focused primarily on the evaluation, research, development, expansion, licensing, and partnering of cannabinoid-based products and delivery technologies, and on the Phase 2 clinical study of REV-004, the evaluation and close-out of the Phase 2a clinical study of REV-002.

On June 27, 2018, Revive announced that the FDA has granted orphan drug designation for CBD in the treatment of AIH to Revive.

On August 22, 2018, Revive announced that it has submitted an application to the FDA seeking orphan drug designation of CBD for the treatment of IRI during liver transplantation.

On September 11, 2018, Revive announced the introduction of RELICANN™, the Company's hemp-based and medical cannabis brand designed for the health and wellness and medical cannabis consumer. The Company's first product under the RELICANN™ brand is RELICANN™ hemp-based CBD gum.

On October 11, 2018, the Company granted a consultant of the Company, 500,000 stock option at an exercise price of $0.19 per share expiring on October 11, 2020.

On November 7, 2018, the Company announced that the FDA granted orphan drug designation for CBD in the prevention of IRI resulting from solid organ transplantation.

Financial Highlights

Financial Performance

The Company's net loss totaled $305,999 for the three months ended September 30, 2018, with basic and diluted loss per share of $0.01. This compares with a net loss of $441,996 with basic and diluted loss per share of $0.01 for the three months ended September 30, 2017. The Company had no revenue in both periods presented.

Net loss for three months ended September 30, 2018 principally related to research costs of $24,232 (three months ended September 30, 2017 - $83,588), professional fees of $43,722 (three months ended September 30, 2017 - $50,721), stock-based compensation of $38,723 (three months ended September 30, 2017 - $26,810), salaries and benefits of $147,412 (three months ended September 30, 2017 - $146,141), consulting fees of $22,500 (three months ended September 30, 2017 - $105,765), depreciation and amortization of $799 (three months ended September 30, 2017 - $715), rent of $8,638 (three months ended September 30, 2017 - $9,816) and office expenses of $19,973 (three months ended September 30, 2017 – $18,440). The decrease of $135,997 related primarily to lower consulting fees and lower research costs during the three months ended September 30, 2018 as compared to the same period of last year.

Cash Flow

At September 30, 2018, the Company had working capital of $520,509, compared to working capital of $786,986 at June 30, 2018. The Company had cash and cash equivalents of $766,525 at September 30, 2018 compared to $1,060,516 at June 30, 2018. The decrease in both working capital and cash and cash equivalents is primarily due to operating expenses incurred during the three months ended September 30, 2018.

Liquidity and Financial Position

Cash and cash equivalents used in operating activities was $293,991 for the three months ended September 30, 2018. Operating activities were affected by a $799 adjustment for depreciation and amortization, stock-based compensation of $38,723, and the net change in non-cash working capital balances of $27,514 because of a decrease in prepaid expenses of $1,932 and decrease in accounts payable and accrued liabilities of $29,446.

There were no investing or financing activities of cash and cash equivalents during the three months ended September 30, 2018.

At September 30, 2018, Revive had $766,525 in cash and cash equivalents.

Accounts payable and accrued liabilities were $269,854 at September 30, 2018. The Company's cash and cash equivalents balance as at September 30, 2018 is sufficient to pay these liabilities.

The Company has no operating revenues and therefore must utilize its income from financing transactions to maintain its capacity to meet ongoing operating activities.

As of September 30, 2018, and to the date of this Interim MD&A, the cash resources of Revive are held with one Canadian chartered bank. The Company has no debt and its credit and interest rate risk is minimal. Accounts payable and accrued liabilities are short-term and non-interest-bearing.

As of September 30, 2018, based on current projections, Revive's working capital of $520,509 is not sufficient to meet its planned development activities for the financial year ending June 30, 2019. The table below outlines the Company's planned uses of working capital:

Use of Capital [1]	Estimated Cost	Spent to date (approx.)	Remaining Funds to Spend or (excess)
REV-002 research development, clinical trials	$55,000	$1,000	$54,000
REV-004 research development, clinical trials	$46,000	$3,000	$43,000
General research, development, and commercialization [4]	$550,000	$20,000	$530,000
Intellectual Property Costs	$50,000	$nil	$50,000
General & Administrative for fiscal 2019 [2]	$1,072,000	$242,000	$830,000
Settlement of arbitration [3]	undetermined	undetermined	undetermined
Total	**$1,773,000**	**$266,000**	**$1,507,000**

Notes:

(1) The use of proceeds provided in the table above should be considered estimates. Actual expenditures to satisfy these estimated costs may, and most likely will, differ from these estimates.

(2) General and Administrative expenses estimated for the year ended June 30, 2019, is as follows:

Salaries and benefits ($600,000), consulting fees ($150,000), office lease ($30,000), travel ($30,000), insurance ($25,000), professional fees ($150,000), transfer agent and regulatory fees ($37,000), technology expenses ($20,000) and marketing ($30,000).

(3) Settlement amount for lawsuit is undetermined as of the date of this Interim MD&A. See "Commitments and Contingency" below.

(4) Estimated general research costs, which also includes cannabinoids for liver diseases, cannabinoid delivery technology, and cannabinoid product programs.

The Company believes that it has insufficient cash on hand to fund its planned expenditures for the financial year ending June 30, 2019. Further financings will be required to develop the Company's product pipeline, meet ongoing obligations, and discharge its liabilities in the normal course of business. There is some flexibility in terms of the pace and timing of product pipeline costs and how expenditures have been, or may be adjusted, limited or deferred subject to current capital resources and the potential to raise further funds. The Company will continue to manage its expenditures essential to the viability of its product pipeline. There is no assurance that additional funds can be raised upon terms acceptable to the Company or at all and funding for small companies remains challenging. Accordingly, the Company's consolidated financial statements have been prepared on a going concern basis. Material adjustments could be required if the Company cannot obtain adequate financing. See "Risk Factors".

Related Party Transactions

Related parties include the directors, close family members, and enterprises that are controlled by these individuals as well as certain persons performing similar functions.

(a) Revive engaged in the following transactions with related parties:

Names	Three Months Ended September 30, 2018 ($)	Three Months Ended September 30, 2017 ($)
Marrelli Support Services Inc. ("Marrelli Support") (i)	10,266	10,570
DSA Corporate Services Inc. and DSA Filing Services Limited (together, known as ("DSA") (ii)	7,474	5,798
Total	**17,740**	**16,368**

(i) Marrelli Support was owed $2,448 as at September 30, 2018 (June 30, 2018 - $2,416) for the services of Carmelo Marrelli to act as Chief Financial Officer ("CFO") of the Company. This amount was included in accounts payable and accrued liabilities. The Company has entered into a consulting agreement (the "Marrelli Consulting Agreement") with Marrelli Support and Mr. Marrelli to provide the services of Mr. Marrelli as CFO of the Company. The term of the Marrelli Consulting Agreement commenced on July 14, 2013, and shall continue until terminated by either Mr. Marrelli or the Company. Pursuant to the Marrelli Consulting Agreement, Mr. Marrelli is entitled to receive monthly compensation of $1,250 per month, and incentive stock option grants on a reasonable basis, consistent with the grant of options to other grantees. In addition, Marrelli Support provides bookkeeping services to the Company. Mr. Marrelli is the President of Marrelli Support. The amounts charged by Marrelli Support are based on what Marrelli Support usually charges its clients. The Company expects to continue to use Marrelli Support for an indefinite period of time.

(ii) DSA was owed $4,438 as at September 30, 2018 (June 30, 2018 - $4,470) for corporate secretarial and filing services. This amount was included in accounts payable and accrued liabilities. DSA consists of two private companies beneficially controlled by Carmelo Marrelli, the CFO of the Company. Services were incurred in the normal course of operations for corporate secretarial, electronic filing and news dissemination services. The Company expects to continue to use DSA's services for an indefinite period of time.

(b) Remuneration of directors and key management personnel of the Company, excluding consulting fees, was as follows:

Stock-based Compensation Names	Three Months Ended September 30, 2018 ($)	Three Months Ended September 30, 2017 ($)
Craig Leon, CEO and Director	nil	4,167
Bill Jackson, Director	nil	4,167
Carlo Sansalone, Director	nil	2,778
Fabio Chianelli, President and Director	nil	2,778
Carmelo Marrelli, CFO	nil	1,112
Dr. Bev Incledon, VP Research & Development	nil	695
Total	**nil**	**15,697**

Salaries and Benefits Names	Three Months Ended September 30, 2018 ($)	Three Months Ended September 30, 2017 ($)
Craig Leon, CEO and Director	62,500	62,500
Fabio Chianelli, President	62,500	62,500
Total	**125,000**	**125,000**

(c) Major shareholders:

As at September 30, 2018, no person or corporation beneficially owns or exercises control or direction over common shares of the Company carrying more than 10% of the voting rights attached to all of the common shares of the Company other than Mr. Fabio Chianelli, the President and a Director of the Company, who owns or controls, directly or indirectly, 11.76% the issued and outstanding shares of the Company. These stockholdings can change at any time at the discretion of the owner.

None of the Company's major shareholders have different voting rights other than holders of the Company's common shares.

The Company is not aware of any arrangements, the operation of which may at a subsequent date result in a change in control of the Company. Other than Mr. Fabio Chianelli, the President and a Director of the Company, who owns or controls, directly or indirectly, 11.76% the issued and outstanding shares of the Company on a partially diluted basis, the Company is not directly or indirectly owned or controlled by another corporation, by any government or by any natural or legal person severally or jointly.

Commitments and Contingency

Commitments

The Company has entered into an agreement (the "CEO Agreement") with an officer (Craig Leon) (the "Employee") of the Company to provide services to the Company in the general capacity of CEO and to

undertake the duties and exercise the powers associated with this role. Under the terms of the CEO Agreement, the CEO is contracted by the Company for an indefinite term, commencing as of July 1, 2016. The Company shall pay the CEO a $250,000 base salary per annum (the "Yearly Base Salary") and annual bonus payments (the "Bonus Payment") from time to time, at the Board's entire discretion, of up to 100% of the Yearly Base Salary based on the achievement of corporate goals and benchmarks relating to the Company's overall performance. The CEO Agreement requires an additional contingent lump-sum payment equal to the Employee's then Yearly Base Salary and the Bonus Payment paid or declared to the Employee, if any, in the Company's previously completed fiscal year upon the occurrence of a change of control or termination without cause. As a triggering event has not taken place, the contingent payments have not been reflected in these consolidated financial statements.

The Company has entered into an agreement (the "President Agreement") with an officer (Fabio Chianelli) (the "Officer") of the Company to provide services to the Company in the general capacity of President and to undertake the duties and exercise the powers associated with this role. Under the terms of the President Agreement, the President is contracted by the Company for an indefinite term, commencing as of January 1, 2014. The Company shall pay the President a $250,000 base salary per annum (the "Annual Base Salary") and annual bonus payments (the "Bonus") from time to time, at the Board's entire discretion, of up to 100% of the Annual Base Salary based on the achievement of corporate goals and benchmarks relating to the Company's overall performance. The President Agreement requires an additional contingent lump-sum payment equal to the Officer's then Annual Base Salary and the Bonus paid or declared to the Officer, if any, in the Company's previously completed fiscal year upon the occurrence of a change of control or termination without cause. As a triggering event has not taken place, the contingent payments have not been reflected in these consolidated financial statements.

In June 2017, the Company entered a new lease agreement commencing on September 2017 for a 24-month period. The Company is required to pay minimum annual lease payment of $15,468.

The Company has entered into various clinical trial arrangements and is committed to fund these trials as they occur. As at September 30, 2018, the Company is committed to funding a maximum cost of clinical trials of approximately $8,000 per patient, in addition to other ad-hoc and clinical trial related fees. The Company is currently seeking development and commercialization partners to advance the program.

The Company has also entered into a licensing arrangement with South Carolina Research Foundation and Wisconsin Alumni Research Foundation, whereby certain milestone payments and royalties are payable upon the achievement of certain events. The Company will record these amounts as the events occur. No events occurred during the three months ended September 30, 2018.

The Company has entered into an agreement with Sanyal Biotechnology LLC ("Sanyal") whereby Sanyal shall conduct a pilot study for autoimmune hepatitis ("AIH") induction on mice. The Company is required to pay US$30,000 to Sanyal in installments.

Effective August 17, 2018, the Company has entered into a distribution and licensing agreement with a third-party and is committed to purchase a minimum amount of product supplied by Axim as follows: US$10,000 for the calendar year 2018, US$50,000 for the calendar year 2019, and US$60,000 for the calendar year 2020.

On September 21, 2018, the Company signed a supply and licensing term sheet with PFHIX Inc. for licensing of PFHIX's technology and supply of Crystals, a product of PFHIX, for use by the Company in the production of its cannabinoids products. The initial fee was $10,000 payable by the Company to PFHIX Inc. and the agreement fee was $90,000.

Contingency

The Company is in dispute with a supplier over invoices in the amount of $827,574 plus interest for which the supplier has sought arbitration. The dispute is in arbitration. No provision has been set up in the accounts of the Company. Any settlement and/or payment will be accounted for in the year it occurs. Readers are cautioned that the eventual resolution of this liability will be based on additional information and the occurrence of future events.

Risk Factors

An investment in the securities of the Company is highly speculative and involves numerous and significant risks. Such investment should be undertaken only by investors whose financial resources are sufficient to enable them to assume these risks and who have no need for immediate liquidity in their investment. Prospective investors should carefully consider the risk factors that have affected, and which in the future are reasonably expected to affect, the Company and its financial position. Please refer to the section entitled "Risk Factors" in the Company's Annual MD&A for the fiscal year ended June 30, 2018, available on SEDAR at **www.sedar.com**.

Subsequent Events

(i) On October 11, 2018, the Company granted, a consultant of the Company 500,000 stock options at an exercise price of $0.19 per share expiring on October 11, 2020.

(ii) On November 7, 2018, the Company announced that the FDA granted orphan drug designation for CBD in the prevention of IRI resulting from solid organ transplantation.