

Managements' Discussion and Analysis  
(Expressed in Canadian Dollars)

## **MIRACULINS INC.**

Three and six months ended May 31, 2012

# MIRACULINS INC.

## Management's Discussion and Analysis

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The following management's discussion and analysis ("MD&A") is current to July 23, 2012 and should be read in conjunction with the unaudited condensed interim financial statements for the six month period ended May 31, 2012 which have been prepared for the first time under International Financial Reporting Standards (IFRS). The Company previously prepared its financial statements in accordance with Canadian generally accepted accounting principles (Canadian "GAAP"). For more information regarding the conversion to IFRS, see note 16 of the condensed interim financial statements, which contains further information and a reconciliation of Miraculins' previously reported financial information prepared under Canadian GAAP to IFRS. Except as otherwise noted, the financial information contained in this MD&A and in the condensed interim financial statements has been prepared in accordance with IFRS. This discussion and analysis provides an update to the Management's Discussion and Analysis for the year ended November 30, 2011, and should be read in conjunction with this document. The Company's independent auditors, KPMG LLP Chartered Accountants, have not reviewed the unaudited condensed interim financial statements. All amounts are expressed in Canadian Dollars unless otherwise noted. Additional information regarding the Company is available on SEDAR at [www.sedar.com](http://www.sedar.com) and on the Company's website at [www.miraculins.com](http://www.miraculins.com).

### OVERVIEW

Miraculins Inc. ("Miraculins" or the "Company") is a medical device company committed to extending life, reducing suffering and lowering healthcare costs. Through acquisition, development and commercialization of diagnostic tests and risk assessment tools for unmet clinical needs, the Company seeks to improve the overall diagnosis quality and treatment of patients by enhancing the information available to patients and physicians. The Company is listed on the TSX Venture Exchange under the symbol "MOM".

The Company's business model is to acquire and/or develop diagnostic and risk assessment opportunities in areas where there are unmet clinical needs. Once Miraculins has advanced a technology through the necessary development stages, it partners with large diagnostic companies, reference laboratories and distribution partners to commercialize and market its technology. These types of relationships typically involve collaborative research agreements, upfront payments, milestone payments and ongoing royalties on sales. Successful execution of this model requires the convergence of product development, marketing, regulatory and corporate finance strategies.

The Company's two primary technology programs are in the areas of maternal health and cardiovascular disease. Miraculins cardiovascular disease program is focused on the PreVu Non-Invasive Skin Cholesterol Test ("PreVu"), a new non-invasive tool for risk assessment of coronary artery disease ("CAD"). In the second quarter of 2012, Miraculins appointed distribution partners for the Canadian medical professional and Canadian retail pharmacy segments, respectively, and has been working with these partners towards commercial launch. The Company's maternal health program is centred on a suite of promising markers for preeclampsia. In 2010, Miraculins partnered its preeclampsia program with Alere, Inc., one of the world's largest diagnostic companies. Alere has diligently advanced the markers subject to that partnership and has recently narrowed its focus to a select set of markers, for which it continues to maintain an option to license.

Miraculins continues to be open to the evaluation of new licensing and acquisition opportunities that fit strategically with the Company's business model, however management remains primarily focused on preparing for the successful commercial launch of the Company's PreVu technology, which will transition Miraculins into a sales and marketing organization. Potential new programs of greatest interest to the Company are those that have completed discovery stage research and biomarker identification, but require additional expertise and resources to be developed into commercial products.

The Company has continued to access capital during difficult market conditions, having successfully completed private placement and debt financings, and obtained non-dilutive grant funding to advance its programs to fund general operating, ongoing product development, inventory and sales and marketing related costs. Miraculins continues to work to selectively advance the critical aspects of its development programs while obtaining the appropriate financing, collaboration and/or license agreements necessary to apply greater resources to its programs.

The Company's future operations are dependent upon its ability to generate product sales, negotiate collaboration or license agreements with upfront payments, obtain research grant funding, and secure additional funds. While the Company is striving to achieve these plans, there is no assurance that these and other strategies will be achieved or such sources of funds will be available or obtained on favourable terms or obtained at all. If the Company cannot generate product sales, negotiate collaboration or license agreements with upfront payments, obtain research grant funding, or if it cannot secure additional financing on terms that would be acceptable to it, the Company will have to consider additional strategic alternatives which may include, among other strategies, exploring the monetization of certain intangible assets as well as seeking to outlicense and/or divest assets. Based on management's current estimates and expected operating activities, sufficient financial resources exist to fund operations into the second quarter of fiscal 2013.

On March 8, 2012, Miraculins announced an agreement that will see The Stevens Company Limited, the largest, privately-owned Canadian distributor of hospital, physician and nursing home supplies, distribute the PreVu Point of Care ("POC") Test to medical professionals in clinical settings across Canada. Additionally, on April 18, 2012, Miraculins announced an agreement that will see Pear Healthcare Solutions, a leading provider of in-pharmacy health screening and education services, distribute the PreVu POC Test to Canadian retail pharmacies and work with pharmacy partners to establish coronary artery disease ("CAD") screening programs using skin cholesterol and other known risk factors for implementation in pharmacy settings across the country. The PreVu POC Test contains two components: the PreVu Handheld Spectrophotometer which is used to both guide the operator through the test and take the skin cholesterol reading; and the Reagent Test Kit, comprised of reagent solution and test consumables to run 40 individual procedures. To facilitate the direct marketing and selling of the product to its medical customer base, the agreement calls for The Stevens Company to purchase a start-up inventory sufficient for national servicing, which will represent Miraculins' first commercial sale of the PreVu technology. The companies will jointly participate in promotional initiatives directed towards the medical segment.

On June 6, 2012, the Company announced the launch of a new Canadian web site for the PreVu POC Test at [www.prevu.com](http://www.prevu.com). The new web site has been designed to provide comprehensive information on the science of skin cholesterol, and the PreVu technology designed to measure this new biomarker for risk of CAD. The site has been divided into two separate information areas; a comprehensive scientific and medical section for healthcare professionals and a general overview section for public/consumers who may be candidates for the PreVu POC Test.

On June 11, 2012, the Company announced that it has received a Notice of Allowance from the United States Patent and Trademark Office for a patent that covers use of spectrophotometric measurements for the non-invasive analysis of skin cholesterol. The allowed patent will cover elements that are key to the PreVu POC Test, specifically relating to the PreVu Handheld Spectrophotometer, which is used to read the level of skin cholesterol during the test. Additionally on June 14, 2012, the Company announced that it has been issued a patent by the State Intellectual Property Office of the People's Republic of China that covers use of a tape stripping device for skin sampling. The issued patent covers elements of the PreVu Non-Invasive Skin Cholesterol LP Test, specifically relating to the LP collection device, which is used to collect skin samples which are then sent to a central lab for processing and measuring the skin cholesterol values of the samples.

On July 10, 2012, the Company announced that Alere had exercised its third and final option to maintain its exclusive option on Miraculins' preeclampsia technology through payment of a non-refundable fee. In accordance with the terms of the Collaborative Research and Option Agreement, Alere maintains an option to license any of the markers that are being advanced under the program. In securing its final exclusive option period, Alere has indicated that it will focus its research and development efforts on seven biomarkers from the original suite of 35 biomarkers that were part of the Collaborative Research and Option Agreement. The final extension period ends on January 10, 2013.

#### **Development Program Highlights**

- The Company's PreVu Non-Invasive Skin Cholesterol Test is designed to address the worldwide market of cardiovascular risk assessment. This novel test measures cholesterol in the skin tissues to assess risk of CAD. In the second quarter of 2012, Miraculins appointed distribution partners for the Canadian medical professional and Canadian retail pharmacy segments, respectively, and has been working diligently with these partners towards commercial launch.

- The Company's preeclampsia technology is comprised of a suite of placental development protein biomarkers for the detection and diagnosis of preeclampsia, a disease of growing incidence and a leading cause of maternal and prenatal deaths worldwide. The program is based on world leading research from Mount Sinai Hospital and is being developed through a collaborative research and development partnership with Alere, Inc., one of the world's largest diagnostic companies.

The following table summarizes the Company's research and development programs:

Product	Program/Indication	Status
PreVu Non-Invasive Skin Cholesterol Test	Coronary Artery Disease Risk Assessment	Nearing product Launch <sup>(1)</sup>
Placental Development Biomarkers	Preeclampsia Biomarkers	Partnered with Alere, Inc. <sup>(2)</sup> Research Stage
Endoglin Assay	Preeclampsia Biomarker	Partnered with Alere, Inc. <sup>(2)</sup> Assay Development & Optimization
Prostate Secretory Protein (PSP94) Assay also known as microseminoprotein-beta (MSMB)	Prostate Cancer Biomarker	RUO Kit Launched <sup>(3)</sup> On hold
MIR-CR1, MIR-GP1, Suite of Markers	Cancer Biomarkers	On hold Research Stage

<sup>(1)</sup> See discussion of the Company's PreVu Program on page 4.

<sup>(2)</sup> See discussion of the Company's Preeclampsia Program on page 6.

<sup>(3)</sup> Miraculins' PSP94 Immunoassay for Urine Specimens is for Research Use Only (RUO) and not for Diagnostic Procedures

## Corporate History

Miraculins began active operations in 2002 as a research and development company focused on the screening and identification of target proteins and peptides related to diseases. The Company's original vision was to contribute to the saving of lives through the early detection and diagnosis of cancer by developing products to increase the information available to physicians and consequently enhance the quality of treatment for cancer patients.

In the spring of 2008, Miraculins announced a shift in its business model, moving the Company's focus away from basic discovery research and further down the diagnostic assay development and commercialization pathway. The Company's business plan is now focused on in-licensing/acquiring and developing diagnostic and risk assessment technologies that address unmet clinical needs and have completed the early stage research phase.

In the fall of 2008, Miraculins announced its first technology acquisition under its new business model. The Company acquired a panel of biomarkers from Mount Sinai Hospital that have demonstrated the potential to detect or diagnose preeclampsia, a devastating condition of growing incidence affecting pregnant women that is the leading cause of maternal and prenatal deaths worldwide. The Company partnered the program with Alere, Inc. in January 2010 for development and potential commercialization.

In late summer 2010, Miraculins completed the acquisition of all assets relating to the PreVu Non-Invasive Skin Cholesterol Test. PreVu is a revolutionary new CAD risk assessment technology that measures cholesterol levels in a patient's skin non-invasively, painlessly and without the need for fasting. Since closing the acquisition of the PreVu technology, Miraculins' has been focused on preparing all aspects of the product for market launch.

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**RESEARCH PROGRAMS**

The Company is focused on developing non-invasive diagnostic tests and risk assessment technologies that address unmet clinical needs in various disease areas. As a result of market conditions and the limited availability of investment funding Miraculins has focused its attention primarily on advancing its preeclampsia program and capitalizing on the acquisition of its PreVu program. The Company has also successfully developed an immunoassay for PSP94 in urine and has intellectual property on PSP94's use in combination with other markers for detecting prostate cancer.

**Cardiovascular Disease Program (PreVu Non-Invasive Skin Cholesterol Test)**

CAD is a leading cause of death worldwide. CAD occurs when fat and cholesterol gradually accumulate in the coronary arteries, forming a plaque that narrows the artery and reduces blood flow to the heart. Undetected or untreated, this build-up of plaque can block the artery and cause a heart attack. A heart attack, also known as a myocardial infarction ("MI"), causes a part of the heart muscle to die, which weakens or prevents the heart's ability to pump blood. Worldwide, about 7.2 million people die from heart attacks every year.

A major risk factor for CAD is high blood cholesterol. It is estimated that more than 250 million cholesterol tests are performed per year in the United States. While blood cholesterol remains one of several important risk factors for heart disease, it is widely accepted that multiple risk factors for CAD must be considered to provide a more accurate picture of the absolute risk of disease.

Absolute cardiovascular disease risk is determined by a combination of all cardiovascular risk factors present. Other traditional and emerging risk factors include: gender; increasing age and heredity; tobacco smoking; high blood pressure; physical inactivity, diet and obesity; diabetes mellitus; C-reactive protein ("CRP"); homocysteine; carotid intima-media thickness ("CIMT"); and coronary calcium, among others. Many of these factors are costly to measure or assess, are resource intensive, are inappropriate for a primary care setting, are not easily accessible by the broader population or require invasive procedures. In addition, many individuals are still getting through this assessment net, as evidenced by growing incidences of heart attacks worldwide. Therefore, a clear unmet medical need exists for new CAD risk factors to identify hidden risk individuals and help avoid that critical first coronary event.

In September 2010, Miraculins announced the acquisition of the PreVu Non-Invasive Skin Cholesterol test, a new and non-invasive tool for risk assessment of CAD. As a new risk factor for heart disease, skin cholesterol measurement provides valuable information to augment traditional CAD risk assessment. Skin contains over 10% of the body's cholesterol and ages in parallel with vascular connective tissue. As blood vessel walls accumulate cholesterol, peer reviewed clinical data has shown that so too does skin tissues. A high skin cholesterol level is a reliable predictor of the risk of higher cholesterol accumulation in the arteries and, accordingly, the risk of heart disease. High levels of skin cholesterol have been shown to be correlated to CAD as measured by stress test, angiography, coronary calcium, and carotid intima-media thickness, inflammatory markers of vascular disease, previous heart attack incidents and Framingham risk score.

This test is conducted by placing a drop of detector reagent on the palm of the hand, which binds selectively to the cholesterol in the skin. After a one minute incubation period, the area is blotted dry to remove any unbound detector solution and an indicator reagent is then added. When combined, a blue colour change occurs in direct proportion to the amount of skin cholesterol present. After two minutes, a hand held spectrophotometer (colour reader) is placed over the drop to precisely measure its hue, generating a quantitative number which indicates a patient's skin cholesterol value.

In addition to the POC format of the test, the PreVu technology is also being developed by Miraculins and partner Gamma-Dynacare Medical Laboratories in a lab-processed format called the PreVu Non-Invasive Skin Cholesterol Lab Processed ("LP") Test or the PreVu LP Test. This format of the test has been designed as a simple collection device that allows a patient or administrator to capture skin cells and cholesterol from the palm of the hand with a medical grade adhesive.

The PreVu POC test has received Health Canada clearance and has been CE-Marked for sale in Europe. In Canada and Europe, the PreVu LP Test has been previously cleared for use as part of risk assessment for CAD. In the United States, the PreVu POC Test has previously been cleared by the FDA for use as part of risk assessment for CAD in persons with a history of heart attack and/or in persons suspected of having significant multi-vessel coronary artery disease (>50% stenosis, or blockage, in more than one vessel, as diagnosed by angiography). Skin cholesterol test results, when considered in conjunction with clinical evaluation, blood cholesterol and other risk factors identified for coronary artery disease, will aid a physician or healthcare practitioner in focusing diagnostic and patient management options.

PreVu has previously been successfully test marketed on a limited basis in North America. In the second quarter of 2012, Miraculins appointed distribution partners for the Canadian medical professional and Canadian retail pharmacy segments, respectively, and has been working with these partners towards commercial launch. During the past year, Miraculins has focused on making the PreVu technology available for commercial sale with six critical activities of focus leading to this significant milestone. The following progress can be reported:

**1. Re-established key manufacturing partnerships for the PreVu reagent test kits and the PreVu handheld spectrophotometer:**

- Announced a manufacturing agreement with International Aerospace/Medical Device Contractor HEI, Inc. for the handheld spectrophotometer.
- Executed a manufacturing agreement for the reagent testing kits with Thermo Fisher Scientific Inc., the world leader in serving science.

**2. Coordinated the establishment of an ISO 13485 certified quality system at Miraculins in order to become the medical manufacturer of record:**

- Developed a complete Quality Management System for the manufacturing and sale of medical devices, including the comprehensive documentation and implementation of a quality manual, standard operating procedures, forms and work instructions, followed by the requisite training of Miraculins' management and team.
- Appointed the BSI Group to provide assessment and certification services.
- Engaged the Emergo Group to provide technical support during the implementation and certification process.
- Successfully passed an ISO 13485 certification audit and was issued an ISO certificate.

**3. Prepared for regulatory notifications required for medical device product marketing in Canada, the United States and Europe:**

- Completed a full review of all available historical regulatory documentation and developed detailed regulatory strategies for both the point of care ("POC") and lab processed ("LP") versions of the test.
- Obtained Health Canada regulatory clearance in January 2012 for the PreVu POC Test.
- Appointed Emergo Europe as the European Authorized Representative and received CE-mark for European marketing in January 2012.
- Received clarification from the FDA on PreVu's current Indication for Use, under which the POC technology can be sold into the US market.

**4. Refreshed the PreVu brand across all marketing and promotional platforms to communicate technology value proposition:**

- Introduced revised PreVu logo and product positioning language to most effectively communicate the full value proposition of the technology.
- announced the launch of a new Canadian web site for the PreVu Non-Invasive Skin Cholesterol POC Test at [www.prevu.com](http://www.prevu.com).

**5. Evaluated multiple sales channels to more precisely target end consumers:**

- Conducted high level pre-sales discussions with key decision makers in a number of important markets including medical clinic chains, retail pharmacies, the life insurance industry, alternative healthcare and established medical device distributors.
- Exhibited the PreVu technology to over 250 potential customers at the Health Fusion conference of the Canadian Association of Naturopathic Doctors ("CAND") in Calgary, a three-day congress, with strong indications that PreVu will be incorporated into Naturopathic Doctors practices across the country once the product is launched.
- Exhibited the PreVu technology at the Ontario Association of Naturopathic Doctors Annual Convention and Tradeshow in Toronto in November 2011.

**6. Conducted partnership discussions to seed sales and distribution channels:**

- Announced an agreement that will see The Stevens Company Limited distribute the PreVu POC Test to medical professionals in clinical settings across Canada.
- Announced an agreement with Pear Healthcare Solutions to distribute the PreVu POC Test to the Canadian retail pharmacy market.
- Formed a critical partnership with Gamma-Dynacare Medical Laboratories, one of Canada's largest and most respected medical laboratories, for the final development and commercialization of the lab processed ("LP") format of the technology – designed to become PreVu's over-the-counter retail test format.
- Conducted meetings and discussions with interested parties for the licensing/distribution rights to PreVu in foreign markets including China, India, South Korea, Mexico, the European Union and Saudi Arabia.

To support the launch plan, Miraculins has appointed key consultants in the areas of scientific, manufacturing, technical development and clinical and regulatory affairs. In addition to bringing their skills to Miraculins, certain consultant resources having experience with the PreVu product prior to Miraculins' acquisition also provides a continuity of technical knowledge as the product advances to commercialization.

Of particular note, Miraculins has established a PreVu Medical Advisory Board (MAB) of distinguished medical professionals to advise on PreVu matters, including product launch strategy. The founding member of the MAB, and its chair, is Dr. G.B. John Mancini, MD, FRCPC, FACC, Vancouver Coastal Health Research Institute - University of British Columbia. Subsequently, both Dr. Milan Gupta, MD, FRCPC, FACC, Associate Clinical Professor of Medicine at McMaster University in Hamilton, Ontario and Assistant Professor of Medicine at the University of Toronto, and Dr. Henry A. Solomon, MD, FACP, FACC, Senior Medical Advisor to the American College of Cardiology, have joined the PreVu MAB.

**Preeclampsia Program**

Preeclampsia is a devastating condition affecting pregnant women that manifests abruptly and results in 15% of all premature births. In the most severe cases, it can result in seizure, stroke, coma, or death. The incidence rate is 7 – 10% of all pregnant women and has an estimated \$7 billion impact on the healthcare system annually. Currently, the sole diagnosis for preeclampsia is by its symptoms; high blood pressure and significant amounts of protein in the urine, which are non-specific to the disease. Currently, preeclampsia affects three million mothers worldwide every year and is associated with premature births and infant illness including cerebral palsy, blindness, epilepsy, deafness and lung conditions. There is no effective detection method for the risk of preeclampsia and the cause is unknown. It is estimated that preeclampsia costs the global health care system US \$3 billion per year. The potential target market for a preeclampsia test is every expectant mother, estimated to be 6 million women annually in the US alone, and greater than 12 million worldwide.

Miraculins' preeclampsia technology is based on a suite of 35 novel protein biomarkers, in-licensed from Mount Sinai Hospital, involved in the development of the placenta and the biology implicated in the development of preeclampsia. The technology was discovered through pioneering research conducted by Dr. Isabella Caniggia and her collaborators at the Samuel Lunenfeld Research Institute of Mount Sinai Hospital, and the Hospital for Sick Children.

One of the promising biomarkers in the portfolio acquired by Miraculins is a cell surface glycoprotein known as Endoglin, which has been widely studied in the independent literature, including a major study published in the New England Journal of Medicine entitled "Soluble Endoglin and Other Circulating Anti Angiogenic Factors in Preeclampsia". Under the direction of independent experts from institutions across the United States, the paper reports that Endoglin levels change during gestation and that it can play a role in identifying the patients at highest risk of preeclampsia. Subsequent studies have continued to report on the strong utility of Endoglin and its role in detecting preeclampsia.

On January 8, 2010, Miraculins announced a partnership with Alere, Inc., a global leader in the convergence of medical diagnostic testing and health management, to advance and potentially commercialize Miraculins' preeclampsia technology. The partnership agreement included a fee paid to Miraculins by Alere to acquire the exclusive option to license the worldwide rights to biomarkers of interest from the program. The goal of the partnership is to commercialize Miraculins' biomarkers for worldwide distribution.



# MIRACULINS INC.

## Management's Discussion and Analysis

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The development program is established in a Collaborative Research and Option Agreement, whereby Alere develops tests for Miraculins' biomarkers and evaluates their performance in large cohorts of patient blood samples. Alere can exercise its option to license at any time during the term of the Collaborative Research and Option Agreement. Upon exercise of the option, Miraculins will receive additional fees, developmental and commercial milestone payments, and royalties on sales.

On July 10, 2012, the Company announced that Alere had exercised its third and final option to maintain its exclusive option on Miraculins' preeclampsia technology through payment of a non-refundable fee. In accordance with the terms of the Collaborative Research and Option Agreement, Alere maintains an option to license any of the markers that are being advanced under the program. In securing its final exclusive option period, Alere has indicated that it will focus its research and development efforts on seven biomarkers from the original suite of 35 biomarkers that were part of the Collaborative Research and Option Agreement. The final extension period ends on January 10, 2013.

Miraculins has retained certain commercial rights to pursue complementary commercial strategies for the markers and receives a secure supply of reagents and certain rights to intellectual property related to the biomarker Endoglin from Alere. In addition, Miraculins has the right to seek other developmental and commercial partners for any markers no longer subject to the Alere option.

### **Cancer Programs**

Miraculins has a number of potential biomarkers for various cancers. Prior to the business model change in 2008, Miraculins' primary focus was research and development with the goal of discovering novel biomarkers for cancer. During this period a series of early stage biomarker discovery programs were established. In order to effectively manage its financial and other resources, the Company is currently focused on its cardiovascular and preeclampsia programs and research and development for these cancer programs has been on hold since 2008. The Company is continually reviewing anticipated costs required to advance these early stage markers. In considering alternatives, the Company evaluates the potential for these programs, the intellectual property, the stage of the research, the likelihood of success and the potential for an acceptable return on investment. Alternatives include seeking an out-licensing partner, advancing the research independently, or cancelling the program. The Company recently terminated its Gastric Cancer program on this basis.

### **New Program Opportunities**

Miraculins is continually evaluating in license/acquisition opportunities in areas where there are unmet clinical diagnostic and risk assessment needs. Diagnostic technologies of greatest interest to the Company have completed discovery stage research and biomarker identification but require additional expertise and resources to be developed into validated commercially viable assays.

### **OUTLOOK**

The strategic direction of the Company is centred on the acquisition, development and commercialization of diagnostic and risk assessment tests for unmet clinical needs. In order to advance these research and development programs, Miraculins expects to continue incurring operating losses. Based on current projections and strategic plans, management expects expenses will increase in fiscal 2012, as compared to fiscal 2011. Any increase in expenditures would result from the continued development of current technology programs and the potential addition of complementary technologies.

The Company's financial statements have been prepared using International Financial Reporting Standards ("IFRS") that are applicable to a going concern, which contemplates that Miraculins will continue in operation for the foreseeable future and will be able to realize its assets and discharge its liabilities and commitments in the normal course of business. There is substantial doubt about the Company's ability to continue as a going concern. The Company has experienced operating losses and cash outflows from operations since incorporation and has not reached successful commercialization of its products.



The Company's future operations are dependent upon its ability to generate product sales, negotiate collaboration or license agreements with upfront payments, obtain research grant funding, and secure additional funds. While the Company is striving to achieve these plans, there is no assurance that these and other strategies will be achieved or such sources of funds will be available or obtained on favourable terms or obtained at all. If the Company cannot generate product sales, negotiate collaboration or license agreements with upfront payments, obtain research grant funding, or if it cannot secure additional financing on terms that would be acceptable to it, the Company will have to consider additional strategic alternatives which may include, among other strategies, exploring the monetization of certain intangible assets as well as seeking to outlicense assets or potential asset divestitures.

The ability of the Company to continue as a going concern and to realize the carrying value of its assets and discharge its liabilities and commitments when due is dependent on the successful completion of the actions taken or planned, some of which are described above, which management believes will mitigate the adverse conditions and events which raise doubt about the validity of the going concern assumption used in preparing these financial statements. There is no certainty that these and other strategies will be sufficient to permit the Company to continue as a going concern.

The Company's financial statements do not reflect adjustments in the carrying values of assets and liabilities, expenses, and the statement of financial position classification used, that would be necessary if the going concern assumption were not appropriate. Such adjustments could be material.

Based on current estimates and expected operating activities, management believes the Company has sufficient financial resources to fund operations into the second quarter of fiscal 2013.

The Company may decide to accelerate, terminate or reduce its focus in certain research areas, or commence research in new areas as a result of the Company's research progress and the availability of financial resources. These decisions are made with the goals of managing the Company's cash resources and optimizing the Company's opportunities. The availability of funding may change management's strategy over the coming year.

## **RISKS AND UNCERTAINTY**

The Company operates in a highly competitive environment that involves significant risks and uncertainties, some of which are outside of the Company's control, which could have a material adverse effect upon the Company, its business and future prospects. Investors should carefully consider the risks and uncertainties described below, as well as other information contained in this MD&A. The risks and uncertainties described below are not exhaustive. There may be risks and uncertainties not presently known to the Company or that the Company believes to be immaterial which could adversely affect the Company and its business in the future.

### **Risks Related to the Company's Financial Condition**

- The Company has not derived any revenue to date from the commercial sale of its diagnostic products. In light of the length of time and expense associated with bringing new products through commercialization, obtaining regulatory approval and bringing products to market, operating losses are expected to continue unless and until the Company is able to generate sufficient revenues from the commercial sale of its diagnostic products.

- The Company has mainly relied on equity and debt financing and grant funding to support operations and will continue to need significant amounts of additional capital. The Company intends to raise additional financing, as required, through research, partnering and licensing arrangements, the exercise of warrants and options, and through equity and/or debt financing. However, there can be no assurance that these financing efforts will be successful or that the Company will continue to be able to meet ongoing cash requirements. It is possible that financing will not be available or, if available, may not be on favourable terms. The Company may fail to obtain additional financing and be unable to fund operations and commercialize its product candidates. The availability of financing will be affected by the results of scientific and clinical research, the Company's ability to attain regulatory approvals, the market acceptance of the Company's products, the state of the capital markets generally (with particular reference to pharmaceutical, biotechnology and medical companies), the status of strategic alliance agreements, and other relevant commercial considerations. Any future equity financing could result in significant dilution to existing shareholders.
- The Company must meet its debt repayment obligations and failure to do so could cause the lender to demand on its security on the Company's long-term debt. There can be no assurance that the Company will continue to meet its debt repayment obligations.

#### **Risks Related to the Company's Business and Operations**

- The Company is in various stages of development of diagnostic and risk assessment products and, as a result, is unable to predict whether it will be able to profitably commercialize its products. There can be no assurance that the Company will be able to commercialize its products.
- Failure to protect intellectual property, or infringement on the intellectual property rights of others, may impede the Company's ability to operate freely. There can be no assurance that the Company's intellectual property rights will not be challenged by third parties, that the Company will receive patents it seeks, or that the Company will receive any necessary licenses. The Company could incur substantial costs in enforcing its intellectual property rights or defending its intellectual property rights against claims brought by others. Miraculins views patents and other means of intellectual property protection as essential to the Company's core business by protecting the Company's proprietary technology from infringement by competitors. To that end, patents will be reviewed and continued to be sought in relation to those components or concepts of each of its pre-clinical and clinical diagnostic products by management of the Company to ensure the highest level of protection possible given the Company's financial position is obtained. The Company requires all employees, consultants, and parties to collaborative research agreements to execute confidentiality agreements upon the commencement of employment, consulting relationships or a collaboration with the Company. These agreements require that all confidential information developed or made known during the course of the engagement with Miraculins is to be kept confidential. The Company also maintains agreements with scientific staff and all parties contracted in a scientific capacity, providing that all inventions resulting from work performed for Miraculins, using Miraculins' property, or relating to Miraculins' business and conceived or completed during the period covered by the agreement are the exclusive property of the Company. Despite these practices, there can be no assurance that the Company will be able to successfully protect its intellectual property rights.
- The Company's business is subject to significant government regulation and failure to achieve and maintain regulatory approval of diagnostic products would negatively affect its business. The process for obtaining such approval, including clinical trials, varies by country and type of product, and the process can be time consuming and costly.

- The Company is dependent on strategic partners, including clinical investigators and contract research organizations, as part of its diagnostic product development strategy, and it would be negatively affected if it is not able to initiate or maintain these relationships. Furthermore, a failure of any of these strategic partners to perform their obligations or to continue in the partnership could delay or halt the development strategy. There can be no assurance that these strategic partners will not pursue other technologies or develop alternative products competing with those of the Company.
- The Company may be dependent on others for the manufacture, development and sale of its products. If the Company is unable to establish or manage collaborations in the future, or if the Company encounters difficulties with these collaborations, there could be a delay in the manufacture, development and sale of products.
- Even if product candidates receive all of the required regulatory approvals, there is no guarantee of market acceptance or commercialization of the resulting product candidates, which will be determined by the Company's sales, marketing and distribution capabilities and the positioning and competitiveness of its diagnostic products compared with any alternatives.
- The Company's ability to successfully market certain diagnostic products may depend in part on the extent to which reimbursement for the cost of such products will be available from government health administration authorities, private health insurers and other organizations. Significant uncertainty exists as to whether newly approved healthcare products will qualify for reimbursement, or the timing by which such reimbursement can be secured. Furthermore, challenges to the price of medical products and services are becoming more frequent. There can be no assurance that adequate third-party coverage will be available to establish price levels, which would allow the Company to realize an acceptable return on its investment in product development. Although non-reimbursed, user-pay models may be available to the Company, uncertainty exists to the degree to which lack of available reimbursement by government health administration authorities, private health insurers and other organizations could limit market adoption of the Company's products. Reimbursement issues and decisions vary country by country as to procedure and time for review and/or reimbursement approval.
- The Company's industry is characterized by intense competition and rapid change and a failure by the Company to react to such competition and change could have a material adverse effect on its business. Competitors may develop products that are more effective and less costly than those developed by the Company. There can be no assurance that developments by others will not cause the Company's products to become non-competitive.
- The Company may conduct development internationally and may be subject to laws and regulations of several countries which may affect the Company's ability to access regulatory agencies and may affect the enforceability and value of the Company's licenses and intellectual property.
- The testing and commercial use of diagnostic products involves exposure to product liability claims. Although the Company maintains liability insurance for certain claims, there is no assurance that such coverage will provide protection against all risks, or that such insurance will continue to be available on terms which would be acceptable to the Company. If a product liability claim was brought against the Company, it could have a material adverse affect on the Company and its financial condition.
- The Company is dependent on certain members of its management and scientific staff. If the Company fails to retain this staff, or to hire qualified key personnel, the implementation of the Company's business plan could slow and the Company may be unable to successfully develop and commercialize products.

### Risks Relating to the Company's Common Shares

- The Company has not paid any cash dividends on its common shares and, for the foreseeable future, the Company does not intend to pay any cash dividends on its common shares and therefore its shareholders may not be able to receive a return on their shares unless they sell them. The policy of the Board of Directors of the Company is to retain all available funds in operations. The Board of Directors may reassess this policy from time to time. Any decision to pay dividends on the common shares of Miraculins will be made by the Board of Directors based on the assessment of, among other factors, earnings, capital requirements and the operating and financial condition of the Company.
- The market price and trading volume of the Company's common shares have been volatile, and may continue to be volatile in the future. Variations in earnings estimates by securities analysts and the market prices of the securities of competitors may also lead to fluctuations in the trading price of the common shares. In addition, the financial markets may experience significant price and volume fluctuations that affect the market price of the Company's common shares that are not related to the Company's operating performance. Broad market fluctuation and economic conditions generally, and in the pharmaceutical sector specifically, may adversely affect the market price of the Company's common shares.
- The significant costs that the Company will incur as a result of being a public company in Canada could adversely affect its business.

### SELECTED QUARTERLY FINANCIAL INFORMATION

The selected financial information provided in the table below is derived from the unaudited quarterly financial statements for each of the last eight quarters (in \$'s):

	Q2 - 2012	Q1 - 2012	Q4 - 2011	Q3 - 2011	Q2 - 2011	Q1 - 2011	Q4 - 2010	Q3 - 2010
Loss for the period	(713,000)	(548,258)	(558,736)	(349,897)	(376,012)	(332,537)	(406,924)	(565,714)
Finance income	4,509	1,471	1,576	6,169	3,102	2,044	2,187	846
Loss per share	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)

The Company adopted IFRS in fiscal 2012 with a transition date of December 1, 2010. The quarterly data for 2010 is presented in accordance with previous Canadian GAAP and has not been restated under IFRS. Accordingly, it may not be comparable with the information for fiscal 2011 and 2012. See "Adoption of International Financial Reporting Standards (IFRS)" on page 20 for a description of the significant differences between Canadian GAAP and IFRS for the Company.

It is important to note that historical patterns of expenditures cannot be taken as an indication of future expenditures. The amount and timing of expenditures, and therefore liquidity and capital resources, may vary substantially from period to period depending on the business and research activities being undertaken at any one time and the availability of funding from investors and prospective commercial partners.

The Company's cumulative quarterly loss over the past two years relates to the expansion of the Company's research and development programs, primarily the acquisition and the move towards commercialization of the PreVu Non-Invasive Skin Cholesterol Test. The increased losses in Q4 2011 and the first two quarters in fiscal 2012 as compared to previous quarters relate to costs associated with the move towards commercialization of PreVu. The Q4 2011 loss has also increased due to an increase in the revaluation of the royalty obligation and interest on the long-term debt obtained in Q4 2011. The 2012 quarterly losses have also increased as a result of interest on the long-term debt and increased stock-based compensation expense, as a result of significant stock options issued during the first quarter of 2012.

**RESULTS OF OPERATIONS**

**General and Administration**

General and administration expenses include those costs not directly related to research and development activities. This includes expenses associated with management services, and professional fees such as legal, audit and investor and public relations activities.

The changes in general and administration expenditures, including stock-based compensation, for the six month periods ended May 31, 2012 and 2011 are reflected in the following table:

Six month periods ended May 31	2012	2011	Increase (Decrease)
Compensation related costs			
Wages, consulting fees, and benefits	\$ 499,924	\$ 252,920	\$ 247,004
Stock compensation related costs	216,277	40,632	175,645
Other administration costs	213,867	138,020	75,847
Total general and administration	\$ 930,068	\$ 431,572	\$ 498,496

The increase in costs for the six month period ended May 31, 2012 as compared to 2011 can be attributed to the following factors:

- The increase in wages, consulting fees, and benefits is primarily related to the appointment of new executive team members, salary increases, and the Company hiring additional employees.
- The increase in stock compensation related costs is related to the granting of stock options to certain of the Company's management, directors, employees and consultants during 2012. In fiscal 2011, the compensation related to stock option grants was significantly less.
- The increase in other administration costs is primarily related to higher professional fees and transfer agent and filing fees.

The Company expects higher levels of general and administration expenditures for the coming fiscal year.

**Research and development**

Research and development expenditures include costs associated with the Company's research and development programs, the significant portion of which are development activities related to the commercialization of the PreVu technology. The Company is in the development stage and devotes a significant portion of its financial resources to research and development activities.

The changes in research and development expenditures, including stock-based compensation, for the six month periods ended May 31, 2012 and 2011 are reflected in the following table:

Six month periods ended May 31	2012		2011		Increase (decrease)
PreVu Non-Invasive Cholesterol test	\$	253,135	\$	122,092	\$ 131,043
less: Government assistance		(19,942)		-	19,942
		233,193		122,092	111,101
Other Research and Development Activities					
Compensation related costs		-		54,423	(54,423)
Laboratory rent and occupancy costs		20,753		18,942	1,811
Contract research and scientific consulting		500		26,397	(25,897)
Consumables		455		9,822	(9,367)
Other research costs		6,250		18,973	(12,723)
Write-offs of intangible assets		-		24,479	(24,479)
less: Government assistance		-		(7,987)	19,942
		27,958		145,049	(117,091)
Total research and development	\$	261,151	\$	267,141	\$ (5,990)

Research and development expenditures for the six month period ended May 31, 2012 remained consistent with the research and development costs for the six months ended March 31, 2011. This can be attributed to the following factors:

- In 2010, the Company acquired assets related to the PreVu Non-Invasive Cholesterol Test. Costs incurred during the six months ended May 31, 2012 were directly related to development activities of this technology as the Company moves towards commercialization of the product. Costs have increased from the six months ended May 31, 2011 as additional costs have been incurred as the Company gets closer to the launch of the product. In the second quarter of 2012, Miraculins appointed distribution partners for the Canadian medical professional and Canadian retail pharmacy segments, respectively, and has been working with these partners towards commercial launch.
- Government assistance relating to the PreVu program is a result of the Company receiving a grant from the Province of Manitoba through the Manitoba Technology Commercialization Program to support the PreVu Non-Invasive Cholesterol Test. The program provided funding to cover up to 50% of eligible costs including legal fees, patenting, marketing studies, literature development, product certification, prototyping, process validation and technical consulting costs to a maximum of \$100,000. During the six months ended May 31, 2012, \$19,942 was recorded under this program. The grant funding was approved in June of 2011 so as a result there was no government assistance relating to the PreVu program during the six months ended May 31, 2011.
- Expenses associated with the Company's other research and development activities has decreased during the six months ended May 31, 2012, when compared to the six months ended May 31, 2011 as the Company's focus is on the advancement of the PreVu technology. The Company terminated its laboratory lease in January of 2012 and incurred a one-time payment of \$17,500 as a result of this lease termination.

- Government assistance in fiscal 2011 relates to the cooperation and project funding agreement with CIIRDF. The Company received funding to offset \$1 for every \$2 spent on research on the project. During the six months ended May 31, 2011 \$7,987 was recorded under the agreement. This project was completed during the 2011 fiscal year and as a result, no further assistance was recorded during the six months ended May 31, 2012 relating to this funding agreement.

The Company expects higher levels of research and development expenditures for the coming fiscal year as the Company moves towards commercialization of PreVu.

**Collaborative Research and Option Fee Income**

The change in collaborative research and option fee income for the six month periods ended May 31, 2012 and 2011 is reflected in the following table:

Six month periods ended May 31	2012		2011		Increase (Decrease)
Collaborative research and option fee income	\$	70,215	\$	46,427	\$ 23,788

The increase in collaborative research and option fee income for the six months ended May 31, 2012 is the result of higher collaborative research and option revenues earned from the agreement with Alere Inc. when compared to the six months ended May 31, 2011.

**Finance Income**

The change in finance income for the six month periods ended May 31, 2012 and 2011 are reflected in the following table:

Six month periods ended May 31	2012		2011		Increase (Decrease)
Finance income	\$	5,980	\$	5,146	\$ 835

Finance income was consistent between the six months ended May 31, 2012 and May 31, 2011 due to similar levels of cash on hand as a result of financings in the respective period. The Company anticipates higher levels of investment income for the coming year as a result of increased cash due to the financing completed in March of 2012.

**Finance Expense**

The change in finance expense for the six month periods ended May 31, 2012 and 2011 is reflected in the following table:

Six month periods ended May 31	2012		2011		Increase (Decrease)
Finance expense	\$	144,330	\$	61,315	\$ 83,015



# MIRACULINS INC.

## Management's Discussion and Analysis



Finance expense for the six months ended May 31, 2012 is primarily the result of the accretion on the royalty obligation associated with the acquisition of PreVu of \$62,000 and interest on the long-term debt that was obtained in October of 2011 of \$80,372. During the six months ended May 31, 2011, the finance expense primarily related to the accretion on the royalty obligation associated with the acquisition of PreVu of \$46,496 and interest on the amount payable to GVI of \$13,835. The increase is due to higher accretion of the royalty obligation, as well as the interest on the long-term debt that was obtained in Q4 of 2011, partially offset by no interest on the amount payable to GVI which was settled in early fiscal 2012 with interest being waived in the period subsequent to September 30, 2011. The Company anticipates higher levels of finance expense as a result of the outstanding debt for the coming year.

### Loss and comprehensive loss for the year

The loss and comprehensive loss for the six month periods ended May 31, 2012 and 2011 is reflected in the following table:

Six month periods ended May 31	2012	2011	Increase (Decrease)
Loss and comprehensive loss for the period	\$ 1,261,258	\$ 708,561	\$ 552,697
Loss per share	\$ 0.02	\$ 0.01	\$ 0.01

As discussed above, the increase in loss for the six months ended May 31, 2012 as compared to the six months ended May 31, 2011 resulted mainly from higher PreVu development activities, stock-based compensation and interest expense.

### LIQUIDITY AND CAPITAL RESOURCES

Since inception, the Company has financed its operations from public and private sales of equity, issuance of debt, the exercise of warrants and stock options, interest income on funds available for investment, government grants and tax credits. As at May 31, 2012, the Company had unrestricted cash totaling \$2,026,294 as compared with \$683,169 at November 30, 2011.

#### Cash used in operating activities

Cash used in operating activities totaled \$1,101,373 for the six months ended May 31, 2012 from ongoing research and development programs as well as general and administration activities, compared to cash used by operating activities of \$810,928 for the same period in fiscal 2011. The increase in cash used in operating activities is due to a higher net loss during the period after adjusting for non cash items and higher prepaid expenses resulting from the payment of a consulting agreement, offset by higher payments on accounts payable and the due to related party balance during 2011.

#### Cash from financing activities

For the six months ended May 31, 2012, cash provided from financing activities totaled \$2,446,744. \$2,433,455 resulted from the issuance of common shares and warrants as a result of the financing that was closed during the period. An additional \$30,000 was obtained upon the exercise of stock options and a payment of \$16,711 related to the repayment in its entirety of the obligation under finance lease. For the six months ended May 31, 2011, cash provided from financing activities totaled \$1,289,478. Of this amount, \$4,565 was for repayment of the obligation under finance lease and \$1,294,043 was from the issuance of shares and the exercise of warrants.

#### Cash used in investing activities

Cash used in investing activities totaled \$2,246 for the six months ended May 31, 2012. Of this amount, \$18,981 was for patent costs and \$9,840 was for the acquisition of property and equipment. Additionally, the Company received proceeds of \$26,575 on the sale of scientific equipment, which was being held for resale. During the six months ended May 31, 2011, cash used in investing activities totaled \$48,656. Of this amount, \$46,807 was for patent costs and \$1,849 was for the acquisition of property and equipment.

**Shares, options and warrants**

On January 20, 2012, the Company issued 952,533 Common Shares to Genesys Venture Inc. ("GVI") in accordance with the terms of an agreement between the two parties to settle the amount payable by the Company to GVI.

On March 29, 2012, the Company closed a private placement offering (the "2012 Offering") with aggregate gross proceeds to the Company of \$2,452,292 from the sale of 22,293,559 units ("Units") at a price of \$0.11 per Unit. Each Unit is comprised of one common share of the Company (a "Share") and one half of one Share purchase warrant (a "Warrant"). Each Warrant will expire 24 months from the date the Warrant is issued (the "Expiry Date") and will entitle the holder to purchase one Share at a price of \$0.16 up to the Expiry Date. There were 11,146,780 warrants issued within the 2012 Offering.

Certain persons assisted the Company by introducing potential subscribers for the 2012 Offering and were paid a finder's fee of up to 8% of the total subscription proceeds received from subscribers introduced to the Company by each particular person. Additionally, these persons were issued compensation warrants ("Compensation Warrants") up to 8% of the total number of Units subscribed for by subscribers introduced to the Company by each particular person. Each Compensation Warrant entitles the holder thereof to purchase one Share at a price of \$0.14 for a period of 12 months from the date of issue. There were 503,047 Compensation Warrants issued. The net proceeds of the Offering shall be used for general corporate purposes.

On May 7, 2012, 300,000 options to purchase common shares were exercised at an exercise price of \$0.10 per common share resulting in the issuance of 300,000 common shares for gross proceeds of \$30,000 to the Company.

During the six months ended May 31, 2012, the Company granted 3,080,000 options to purchase Common Shares to certain directors, an officer, employees and advisors of the Company with a weighted average exercise price of \$0.10. Additionally, 190,000 options expired during the six months ended May 31, 2012.

6,248,332 warrants expired on December 15, 2011. On March 29, 2012, 11,649,827 warrants were issued as described above.

	July 23, 2012	May 31, 2012	November 30, 2011
Common shares issued and outstanding	92,968,820	92,968,820	69,422,728
Options outstanding	6,795,000	6,795,000	4,205,000
Warrants outstanding	11,649,827	11,649,827	6,248,332

The Company believes it has sufficient financial resources to fund operations into the second quarter of fiscal 2013. The Company's management may consider all financing alternatives and may seek to raise additional funds for operations from current stockholders and other potential investors. This disclosure is not an offer to sell, nor a solicitation of an offer to buy the Company's securities. Where the Company opts to pursue such financing, there is no assurance that funding will be available or obtained on favourable terms.

**CONTRACTUAL OBLIGATIONS**

The Company periodically enters into long-term contractual agreements for the leases of office facilities and equipment, management services, and certain purchased services. The following table presents commitments arising from agreements currently in force over the next five years.

	Payments due by Period			
	Within 1 year	2 - 3 years	4 - 5 years	Total
Management services agreement	\$ 49,583	\$ -	\$ -	\$ 49,583
Contractual commitments	34,005	40,000	40,000	114,005
Accounts payable and accrued liabilities	152,461	-	-	152,461
Long-term debt	120,000	1,120,000	-	1,240,000
	\$ 356,049	\$ 1,160,000	\$ 40,000	\$ 1,556,049

Effective January 1, 2012, the Company amended the terms of the business and administration services agreement with GVI, including the provision of Chief Financial Officer services. The Company is committed to pay \$7,083 per month or \$85,000 per annum for a period of one year.

The Company is obligated to pay an annual licence maintenance fee beginning on October 15, 2011, which is the third anniversary date of a license agreement with the Mount Sinai Hospital in Toronto, Canada. For further information refer to Note 5 contained in the condensed interim financial statements for the periods ended May 31, 2012.

On April 9, 2012 a payment of \$15,919 in regards to the finance lease was made and there is no further obligation under this lease.

The Company previously leased its laboratory space under an operating lease. In addition to the annual lease payments, the Company also paid maintenance, property taxes, insurance and other operating costs. The premises and equipment were leased from GVI, a company controlled by a former director. On January 16, 2012, the Company and GVI mutually agreed to terminate the remainder of the laboratory lease for a one-time payment of \$17,500 and there is no further obligation under this lease.

The Company is obligated to pay royalties to PreMD based on any future commercial sale of PreVu Skin Cholesterol Test equal to 10 percent of gross revenue associated with PreVu. The Company retains the right to buy-out the royalty at anytime for a one-time payment of \$1,000,000. To date, no revenue had been recorded related to PreVu.

The Company is obligated to pay royalties to CIIRDF based on any future product revenues, if any, from the exploitation of the technology contemplated in the project funding agreement, described in note 9 to the audited financial statements for the year ended November 30, 2011, equal to 2.5 percent up to a maximum of the amounts funded under the agreement. To date, no royalties are due and/or payable.

The Company will also pay a royalty to MSH, subject to minimum annual royalties, of a stipulated percentage of the net sales of licensed products related to the worldwide rights to commercialize a portfolio of biomarkers for use in developing diagnostic assays for the early detection of preeclampsia, if any, along with other milestone payments. If the Company sub-licenses any rights under the agreement to a third party, the Company shall pay MSH a stipulated percentage of the sub-license fee and sub-license royalty fee as described in note 5 to the condensed interim financial statements for the periods ended May 31, 2012.

A summary of the Company's contractual obligations may be found in Note 11 of the condensed interim financial statements for the periods ended May 31, 2012.

## **RELATED PARTY TRANSACTION**

On January 20, 2012, the Company issued 952,533 Common Shares to Genesys Venture Inc. (GVI), a party which was related to the Company until November 1, 2011, when a director who controlled GVI resigned from the Board of Directors, in accordance with the terms of an agreement between the two parties to settle the amount payable of \$64,296 by the Company to GVI.

The Company has an on-going consulting agreement with a shareholder to provide services as needed from time to time. For the six months ended May 31, 2012 \$62,500 and \$65,500 respectively was recorded in general and administration expenses relating to this consulting agreement. As at May 31, 2012, \$87,500 was recorded in prepaid expenses in relation to this contract.

## **OFF-BALANCE SHEET ARRANGEMENTS**

Other than as described above, the Company does not have any off-balance sheet arrangements.

## **CONTROLS**

### **Effectiveness of disclosure controls and procedures**

Management has established and maintained disclosure controls and procedures for the Company in order to provide reasonable assurance that material information relating to the Company is made known to management in a timely manner and that information required to be disclosed by the Company is reported within the time periods prescribed by applicable securities legislation.

A control system can only provide reasonable, not absolute, assurance that the objectives of the control system are met. The design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs.

As a result of the Company's limited administrative staffing levels, internal controls which rely on segregation of duties in many cases are not appropriate or possible. Due to resources constraints and the present stage of the Company's development, the Company does not have sufficient size and scale to warrant the hiring of additional staff to correct this potential weakness at this time. To help mitigate the impact of this potential weakness and to ensure quality financial reporting, the Company is highly reliant on the performance of compensating procedures and senior management's review and approval to ensure that the controls are as effective as possible.

During the six months ended May 31, 2012, the Company made no material changes to its systems of internal controls over financial reporting.

## **CRITICAL ACCOUNTING POLICIES AND ESTIMATES**

The preparation of financial statements in conformity with International Financial Reporting Standards (IFRS) requires the Company to select from possible alternative accounting principles and to make estimates and assumptions that determine the reported amounts of assets and liabilities at the balance sheet date, and reported costs and expenditures during the reporting period. Management believes that the estimates and assumptions upon which the Company relies are reasonable based upon information available at the time these estimates and assumptions are made. Estimates and assumptions may be revised as new information is acquired, and are subject to change.

In addition to the going concern assumption previously described, management believes that its most critical accounting policies and estimates relate to the following areas, with reference to notes contained in the accompanying financial statements:

### **Research and development costs**

The Company's accounting policy over research and development costs may be found in Note 3(f)(i) to the Company's initial financial statements filed under IFRS for the three months ended February 29, 2012. Expenditures on research activities, undertaken with the prospect of gaining new scientific or technical knowledge and understanding, are recognized in profit and loss as incurred. Development activities involve a plan or design for the production of new or substantially improved products and processes. Development expenditures are capitalized only if development costs can be measured reliably, the product or process is technically and commercially feasible, future economic benefits are probable, and the Company intends to and has sufficient resources to complete the development and to use or sell the asset. No development costs have been capitalized to date.

### **Acquired intellectual property**

The Company's accounting policy over acquired intellectual property may be found in Note 3(f)(ii) to the Company's initial financial statements filed under IFRS for the three months ended February 29, 2012. Costs incurred for acquired intellectual property will be amortized over the estimated period that it is available for use in the manner intended by management, which is estimated to be three to five years.

### **Patents and trademarks**

The Company's accounting policy over patents and trademarks may be found in Note 3(f)(iii) to the Company's initial financial statements filed under IFRS for the three months ended February 29, 2012. Costs incurred for patents and trademarks are capitalized and amortized from the date of issuance on a straight-line basis over their respective legal lives or economic life, if shorter. Trademarks have an indefinite life. Costs incurred in successfully obtaining a patent or trademark are measured at cost less accumulated amortization and accumulated impairment losses. The cost of servicing the Company's patents and trademarks is expensed as incurred.

### **Technology licenses**

The Company's accounting policy over technology licences may be found in Note 3(f)(iv) to the Company's initial financial statements filed under IFRS for the three months ended February 29, 2012. Technology licenses are recorded at cost and amortized over their estimated useful life.

### **Stock-based compensation**

The Company's accounting policy over stock-based compensation may be found in Notes 3(i)(ii) and 10(c) to the Company's initial financial statements filed under IFRS for the three months ended February 29, 2012. The grant date fair value of share-based payment awards granted to employees is recognized as a personnel expense, with a corresponding increase in equity, over the period that the employees unconditionally become entitled to the awards. The amount recognized as an expense is adjusted to reflect the number of awards for which the related service and non-market vesting conditions are expected to be met, such that the amount ultimately recognized as an expense is based on the number of awards that do meet the related service and non-market performance conditions at the vesting date. For share-based payment awards with non-vesting conditions, the grant date fair value of the share-based payment is measured to reflect such conditions and there is no true-up for differences between expected and actual outcomes.

Share-based payment arrangements in which the Company receives goods or services as consideration for its own equity instruments are accounted for as equity-settled share-based payment transactions. In situations where equity instruments are issued and some or all of the goods or services received by the entity as consideration cannot be specifically identified, they are measured at fair value of the share-based payment.

### **Impairment of non-financial assets**

The Company's accounting policy over impairment of non-financial assets may be found in Note 3(h)(ii) to the Company's initial financial statements filed under IFRS for the three months ended February 29, 2012. The carrying amounts of the long-lived non-financial assets, including intangible assets and property and equipment, are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. Intangible assets that have indefinite lives and intangible assets not yet put into use are evaluated for impairment at least annually.

An impairment exists when the carrying value of an asset exceeds its recoverable amount, which is the higher of its fair value less costs to sell or its value in use. The fair value less costs to sell calculation is based on available data from observable market prices, less incremental costs. The value in use calculation is based on a discounted cash flow model. These calculations require the use of estimates and forecasts of future cash flows. Qualitative factors, including market size and market growth trends, strength of customer demand and degree of variability in cash flows, as well as other factors, are considered when making assumptions with regard to future cash flows and the appropriate discount rate. A change in any of the significant assumptions or estimates used to evaluate the underlying assets could result in a material change to the results of operations.

Impairment losses recognized in prior periods are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed, to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of amortization, if no impairment had been recognized. Write-downs as a result of impairment are recognized in research expense in the statement of comprehensive loss.

A summary of all of the Company's significant accounting policies and estimates may be found in Note 3 to the accompanying financial statements for the three months ended May 31, 2012.

### **CHANGES IN ACCOUNTING POLICIES**

#### **Adoption of International Financial Reporting Standards (IFRS):**

In February 2008 the Canadian Accounting Standards Board ("AcSB") confirmed that the use of IFRS would be required for Canadian publicly accountable enterprises for interim and annual financial statements effective for fiscal years beginning on or after January 1, 2011. The Company implemented these standards on December 1, 2011.

In May 2012, the Company filed its condensed interim financial statements for the three months ended February 29, 2012, which represent the initial presentation of its results and financial position under IFRS. These condensed interim financial statements for the period ended May 31, 2012 should be read in conjunction with the Company's condensed interim financial statements for the period ended February 29, 2012. As the Company's interim financial statements were previously prepared in accordance with previous GAAP, disclosure of the transition from previous GAAP to IFRS is included in Note 16.

In preparing the condensed interim financial statements in accordance with IFRS 1, the Company has applied the mandatory exceptions and certain of the optional exemptions from full retrospective application of IFRS.

### **FORWARD-LOOKING STATEMENTS**

This Management's Discussion and Analysis ("MD&A") contains forward-looking information as defined in applicable securities laws (referred to herein as "forward-looking statements") that reflect the Company's current expectations and projections about its future results. All statements other than statements of historical fact are forward-looking statements. Forward-looking statements are based on the current assumptions, estimates, analysis and opinions of management of the Company made in light of its experience and its perception of trends, current conditions and expected developments, as well as other factors which the Company believes to be relevant and reasonable in the circumstances.

The Company uses words such as “believes,” “may,” “plan,” “will,” “estimate,” “continue,” “anticipates,” “intends,” “expects,” and similar expressions to identify forward-looking statements, which, by their very nature, are not guarantees of the Company’s future operational or financial performance, and are subject to risks and uncertainties, both known and unknown, as well as other factors that could cause the Company’s actual results, performance, prospects or opportunities to differ materially from those expressed in, or implied by, these forward-looking statements.

Specifically, this MD&A contains forward-looking statements regarding, but not limited to, the Company’s:

- intention to acquire, develop and commercialize diagnostic tests for unmet clinical needs;
- intention to partner with large diagnostic companies and reference laboratories to commercialize and market technology;
- expectation regarding collaborative research agreements, upfront payments, milestone payments, ongoing royalties on sales and other sources of revenue;
- expectation regarding new diagnostic program opportunities;
- intentions regarding the protection of intellectual property;
- business strategy; and
- intention with respect to dividends.

Inherent in forward-looking statements are known and unknown risks, uncertainties and other factors beyond the Company’s ability to predict or control that may cause the actual results, events or developments to be materially different from any future results, events or developments expressed or implied by such forward-looking statements. Such risk factors include, among others, the Company’s stage of development, lack of product revenues, additional capital requirements, the ability to protect its intellectual property, dependence upon collaborative partners, changes in government regulation or regulatory approval processes, and rapid technological change in the industry. These factors should be considered carefully and readers are cautioned not to place undue reliance on such forward-looking statements.

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 MD&A. Such statements are based on a number of assumptions which may prove to be incorrect, including, but not limited to, assumptions about:

- the availability of financing for the Company’s research and development projects, or the availability of financing on reasonable terms;
- general business and economic conditions;
- the timing of the receipt of regulatory and governmental approvals for the Company’s research and development projects;
- interest rates and foreign exchange rates;
- the Company’s costs of research projects;
- positive results of current and future clinical trials;
- the uncertainties associated with the acceptance and demand for new products;
- research projects not being unreasonably delayed and expenses not increasing substantially;
- government regulation not imposing requirements that significantly increase expenses or that delay or impede the Company’s ability to bring new products to market;
- the Company’s ability to attract and retain skilled staff;
- the impact of changes in Canadian-US dollar and other foreign exchange rates on the Company’s costs and results;
- market competition;
- tax benefits and tax rates; and
- the Company’s ongoing relations with its employees and with its business partners.

Although management of the Company believes that these forward-looking statements are based on reasonable assumptions, a number of factors could cause the actual results, performance or achievements of the Company to be materially different from the future results, performance or achievements expressed or implied by such forward-looking statements. The forward-looking statements contained in this MD&A and any documents incorporated by reference herein are expressly qualified by this cautionary statement. The Company cautions you that the foregoing list of important factors and assumptions is not exhaustive. Events or circumstances could cause actual results to differ materially from those estimated or projected and expressed in, or implied by, these forward-looking statements. You should also carefully consider the matters discussed under “Risk Factors” in this MD&A which provides for additional risks and uncertainties relating to the Company and its business. The Company undertakes no obligation to update publicly or otherwise revise any forward-looking statements or the foregoing list of factors, whether as a result of new information or future events or otherwise, other than as may be required by applicable legislation.