



March 30, 2011

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

For the year ended December 31, 2010

The following information should be read in conjunction with SemBioSys Genetics Inc.'s ("SemBioSys", the "Company", "we", "us" or "our") consolidated financial statements and related notes for the year ended December 31, 2010 which were prepared in accordance with Canadian generally accepted accounting principles. Additional information relating to our Company, including our Annual Report and Annual Information Form for the year ended December 31, 2010, is available by accessing the SEDAR website at www.sedar.com.

FORWARD-LOOKING FINANCIAL STATEMENTS AND CAUTIONARY FACTORS THAT MAY AFFECT FUTURE RESULTS

Certain statements included in management's discussion and analysis of financial conditions and results of operations ("MD&A") constitute forward-looking statements. All statements contained herein that are not clearly historical in nature are forward-looking, and the words "anticipate", "believe", "continue", "expect", "estimate", "intend", "may", "plan", "will", and other similar expressions are generally intended to identify forward-looking statements.

Forward-looking statements in the MD&A include, but are not limited to, statements with respect to: the nature, benefits and potential impact of our transgenic plant production and oilbody-oleosin technology, the demand for certain pharmacological therapies, the impact of our apolipoprotein AI_{Milano} ("Apo AI_{Milano}") pre-clinical results and biosimilar human insulin ("biosimilar insulin") clinical trial results on partnership discussions, the completion of a partnership, the projected timelines for achievement of milestones under the Corporation's investment agreement with AVAC Ltd. ("AVAC"), the projected population size that will be affected by diabetes worldwide by 2025, the ability of funding to cover the costs of pre-clinical material preparation, studies and clinical trials, the projected timing for the completion of studies and the submission of investigational new drug applications ("IND").

All forward-looking statements are based on our beliefs and assumptions based on information available at the time the assumption was made. These forward-looking statements are not based on historical facts but rather on our expectations regarding future growth, results of operations, performance, future capital and other expenditures (including the amount, nature and sources of funding thereof), competitive advantages, business prospects and opportunities. Forward-looking statements involve significant known and unknown risks, uncertainties, assumptions and other factors that may cause our actual results, levels of activity, performance or achievements to differ materially from those implied by forward-looking statements. These factors should be considered carefully and readers should not place undue reliance on the forward-looking statements. Factors which could cause future outcomes to differ materially from those set forth in the forward-looking statements include, but are not limited to: (i) the assumption that we will be able to obtain sufficient and suitable financing to support operations, pre-clinical and clinical trials and commercialization of products; (ii) the risk that we may be unable to execute partnerships and corporate alliances; (iii) the risks relating to the uncertainties of the regulatory approval process; (iv) our assumption that we will be able to develop seed lines and manufacturing processes that result in competitive advantage and commercial viability; (v) the impact of competitive products

and pricing and the assumption that we will be able to successfully compete in the targeted markets; (vi) the assumption that we will be able to successfully complete in a timely manner pre-clinical and clinical studies; (vii) the risk that we may be unable to attract and retain key personnel and key collaborators; and (viii) the assumption that we will be able to adequately protect proprietary information and technology from competitors.

Although the forward-looking statements contained in our MD&A are based upon what we believe to be reasonable assumptions, we cannot assure readers that actual results will be consistent with these forward-looking statements. These forward-looking statements are made as of the date of this MD&A. We undertake no obligation to update any forward-looking statement or statements to reflect events or circumstances after the date on which such statement is made or to reflect the occurrence of unanticipated events, except as may be required by applicable Canadian securities laws.

By its nature, forward-looking information involves numerous assumptions, inherent risks and uncertainties, both general and specific, that contribute to the possibility that the predictions, forecasts, projections or other forward-looking statements will not occur. Readers should carefully consider the information contained under the heading "Risks and Uncertainties" and all other information included in or referenced in this MD&A.

GOING CONCERN

On September 24, 2010 we announced that the Company was working on a number of strategic options potentially available, including a corporate sale or merger, an accelerated strategic partnering transaction for either Biosimilar Insulin ("Insulin) or Apo A1_{Milano} ("Apo"), a significant restructuring and recapitalization or an orderly wind down of the Company's business. In an effort to extend the current cash runway we further downsized and reduced our monthly expenditures. Subsequent to the end of the year, we secured an additional \$4 million financing. Based on the foregoing, the Company will continue to avail itself to strategic partnering activities and funding opportunities, however, no assurances can be made that it will be successful in raising additional investment capital, realizing assets, discharging liabilities or achieving successful partnership collaborations to generate sufficient cash flows to continue as a going concern. As a result, there is still significant risk regarding the Company's ability to continue as a going concern.

In the fourth quarter, we secured an additional \$500,000 in funding commitments from AVAC. This non dilutive investment extended our cash runway into 2011 and allowed us to maintain the core competencies related to our key staff.

The \$4 million financing that was closed subsequent to year end consists of bonds with an aggregate face value of \$4 million (the "Bonds") and detachable warrants (the "Warrants") to purchase common shares of the Company. The exercise price of the Warrants is initially \$0.06 per share, subject to adjustment.

The Bonds issued in the transaction bear interest at a rate of 7% per annum, compounded annually, have a maturity date of 10 years from the date of issuance and are secured by certain intellectual property assets of SemBioSys. The Bonds include a "call" provision that provides that they can be called by the holder after three years or redeemed at 120% of their face value, plus accrued interest, at any time by SemBioSys.

The Warrants entitle the holder to purchase, with either all or a combination of, cash, Bonds and/or accrued interest (at 7% compounded annually), the equivalent of \$4 million, plus accrued interest, worth of common shares of SemBioSys for a period of 10 years after the closing of the proposed financing at an initial exercise price of \$0.06 (the "Initial Exercise Price") per common share. The Initial Exercise Price can be reduced on each six month anniversary of the date of issuance of the Bonds if the simple average daily closing price of the common shares on the Toronto Stock Exchange for the previous six month period is less than \$0.06, subject to a floor

price of \$0.05 (the "Floor Price") per common share. If the Initial Exercise Price is adjusted downward in accordance with the previous sentence, it shall not thereafter be adjusted upwards, except in connection with proportional price adjustments required in connection with, for example, a share consolidation. In the event the Company undertakes certain dilutive common share issuances, the Floor Price may be adjusted downwards and the maximum number of common shares issuable may be increased.

BUSINESS OVERVIEW

We are a biotechnology company that employs our patented plant seed oilbody expression technology platform to develop biosimilar drug candidates and high value proteins. Our lead pharmaceutical candidates, produced in our proprietary safflower plant expression system, are recombinant biosimilar human insulin ("Biosimilar Insulin") to serve the rapidly expanding global diabetes market and apolipoprotein AI_{Milano} ("Apo AI_{Milano}"), a potential blockbuster cardiovascular drug that has been very difficult and expensive to manufacture using traditional methods. Biosimilar drugs are poised for significant growth as new entrants avoid traditional manufacturing methods and patents and bring to market the first generation of biologic drugs off patent with less expensive production methods such as those offered by SemBioSys. With its significant potential for savings in cost of goods, the Company's platform technology is uniquely positioned to benefit from this rapidly growing new field of drug development and manufacturing.

We have also demonstrated our platform's applicability in the production of non-pharmaceutical proteins and oils. SemBioSys continues to evaluate opportunities where its proprietary platform technology offers a unique competitive advantage to the production and manufacture of proteins and oils. The Company is in a number of partnering discussions for its current development programs and is looking at new opportunities where its technology can be quickly deployed to develop additional new product candidates through strategic development partnerships.

Business Strategy and Core Technology

Our business strategy is to use our technology platform to develop biosimilar drug candidates and high value protein based products to achieve commercial proof of concept; with the aim to form strategic development and commercialization partnerships from which to bring our products to market. We believe our technology has the potential to provide us and our partners with a significant and sustainable competitive advantage. Our technology platform is based on the genetic engineering of oilbodies, the structures used by seeds to store oil and oilbody associated proteins. We believe that our oilbody-oleosin technology is unique among transgenic technologies as it is the only transgenic technology that addresses protein recovery and purification contemporaneously with bulk protein production.

Through the application of our technology platform, we have developed expertise in plant transformation, recombinant protein production in plant seeds, plant-based protein purification, modification of oilseed lipids to produce high-value oils, and the preparation and use of both transgenic and non-transgenic plant oilbodies. We believe the benefits of plant-production and the oilbody-oleosin technology include:

- Lower production costs – expected unit costs of production to be significantly lower than traditional systems;
- Flexible and scalable production process – protein production can be scaled up or down by simply increasing or decreasing crop production;
- Enabling the production of difficult to produce proteins – allowing transgenic production of proteins that are problematic for other systems due to our ability to employ our proprietary oilbody technology to enhance protein purification, stability and accumulation; and

- Lower capital costs – expected capital costs to be significantly lower than traditional systems as we eliminate the need for investment in expensive fermentation facilities which are regulated and inspected by the Food and Drug Administration (“FDA”) and which must be operated and maintained continuously.

Our business strategy for our pharmaceutical programs is to develop each program to a proof of concept stage at which we can demonstrate that our program is viable and offers a clear competitive advantage, whether that is through disruptive economics and/or product enablement, and then partner the program. We anticipate that these partners will have significant development and commercialization resources, including in many instances, established sales and distribution capabilities. We expect short to mid-term revenue to be generated from partnering our programs at the proof of concept phase and contract research. The short to mid-term revenue from partnering our programs may include upfront license fee payments and milestone payments for ongoing development. Long-term revenue is expected to be generated from ongoing royalty payments once our partnered biopharmaceutical product candidates have been commercialized. Depending on the territory, partnership structures may also include joint venture partnerships in lieu of out-licensing transactions.

Biopharmaceuticals and Bioproducts

We are developing products and product candidates using our proprietary protein production system. Our biopharmaceutical pipeline is currently focused on Biosimilar Insulin for diabetes and Apo A_{Milano} for atherosclerotic cardiovascular disease. In addition, we have identified a number of potential biosimilar products that we have made at bench scale, including antibodies, peptides and vaccines among others that we are evaluating as pipeline assets for potential future development with strategic partners who have aligned development and commercial expertise in the respective therapeutic areas. Although SemBioSys’ experience and capabilities are not limited to the biopharmaceuticals sector, we believe we can provide a unique competitive advantage through quick development timelines strengthened by lower cost manufacturing and/or product enablement of our biopharmaceutical candidates. We believe that our technology offers unique cost advantages for several reasons, including:

- simplification of manufacturing processes via oilbody-mediated recovery/purification; and
- reduced inputs with raw material production being fuelled by photosynthesis in the field resulting in a significant reduction in upfront capital and equipment costs, as well as, continuing costs associated with maintaining traditional large-scale bioreactors and/or other biologic manufacturing systems.

We have conducted extensive process testing at a pilot scale, confirming that our technology can reduce the number of steps and complexity of biomanufacturing processes, thereby improving production economics compared to traditional manufacturing technologies. Traditional biomanufacturing technologies are primarily based on fermentation technology. Our technology, unlike that of the majority of our competitors, does not rely on fixed volume bioreactors for bulk production of protein. As a result, we can scale up production of therapeutic proteins in large volumes more cost effectively by reducing the amount of capital expenditures required to build and operate a large scale fermentation facility. Biotherapeutics like Biosimilar Insulin or Apo A_{Milano} will require several thousand kilograms of production per year, as opposed to the less than 50 kilogram per year volume required to be produced for many other biopharmaceutical products. Since our product is grown in the field, it is arguably more cost effective to plant additional acres to produce greater volumes of seed if additional product volume is required, rather than investing time and capital to build more fixed volume bioreactors. Additionally, our technology provides us with the ability to separate seed production from product processing enabling us to produce a large volume of seed inventory and store it at little cost for many years without degradation of protein. We believe our ability to scale up biosimilar production while reducing the cost of production compared to traditional methods represents a significant and disruptive competitive advantage if our products are successful in reaching the market. This advantage is rapidly

becoming of particular strategic importance as national healthcare in the United States and China progress towards becoming more universal and affordable, thus making the lower cost of production for biosimilars a key advantage.

BIOPHARMACEUTICALS AND BIOPRODUCTS PROGRAMS UPDATE

Insulin

We are developing Biosimilar Insulin (“SBS-1000”) derived from genetically engineered safflower, to serve the expanding diabetes market and to enable the commercialization of alternative insulin delivery technologies through a scalable, cost-effective source of production. We anticipate that the current unmet demand for insulin in the developing world, the increased incidence of diabetes and the commercialization of new insulin delivery technologies will increase world-wide insulin demand significantly in the next five years and beyond. Based on statistics from the International Diabetes Federation, we estimate diabetes currently affects 285 million individuals worldwide and is projected to affect over 438 million individuals by 2030. Insulin therapy is the principal treatment for type 1 diabetes and is frequently prescribed for mid to late stage type 2 diabetes. We believe that our safflower-produced insulin will allow us to meet a portion of the anticipated surge in demand while at the same time significantly reducing the cost of insulin production to better serve developing markets.

During the year, we continued to focus on our business strategy of seeking out one or more strategic partners to fund the further development and commercialization of the Biosimilar Insulin program. We advanced discussions with multiple companies to secure one or more partnerships that best position our insulin program for late stage development both in the developed world and key developing world markets including China, India and South America. We are now in late stage discussions to form a strategic partnership for our insulin program.

The improvements made during the first half of the year to our next generation seed line will significantly reduce the cost of safflower produced insulin. As a result of those improvements, we focused our efforts on further optimizing the manufacturing process during the second half of the year. The optimization of the manufacturing process will help achieve our goal of being the lowest cost producer of insulin in the world. In addition to working on process optimization we initiated indoor grow outs and successfully completed a field grow out of one of our improved seed lines. The seed from these harvests will be used for the additional optimization and scale-up of our commercial insulin manufacturing process.

The next steps for the Biosimilar Insulin program include further scale-up and optimization of the manufacturing process, an End of Phase II meeting with the FDA and completion of a commercialization partnership(s) as outlined above. Our commercialization strategy is to have a strategic development partnership in place before the commencement of our Phase III trial.

Apo AI_{Milano}

Utilizing our plant based protein expression platform, we are developing Apo AI_{Milano}, a naturally occurring variant of Apo AI, which is a human protein, for use as a cardiovascular therapy to reduce, stabilize and reverse the formation of vascular atherosclerotic plaque for the prevention and treatment of cardiovascular disease. According to the World Health Organization, cardiovascular diseases are the leading cause of mortality worldwide. Drugs aimed at cholesterol and triglyceride management are the second largest class of prescription pharmaceuticals.

Apo AI and Apo AI_{Milano} are believed by many clinicians to be the archetype for a new generation of cardiovascular drugs. Apo AI is the major apolipoprotein associated with HDL, commonly referred to as “good cholesterol”, which naturally removes plaque from arteries. Unlike statins,

the current lead drug class in the cardiovascular disease drug market, which at typically used doses tend to halt or slow plaque build-up, clinical trial results with Apo AI_{Milano} demonstrated significant plaque reduction over a matter of weeks. In human trials, microbial-produced Apo AI_{Milano} has been demonstrated to remove plaque from arteries, and thereby holds the potential for addressing atherosclerosis, which we believe is currently a significant unmet medical need.

If successfully commercialized, predicted high dosing (multiple grams per course of patient treatment) coupled with a large patient population would be expected to drive volume demand for several tons of Apo AI_{Milano} per year. We anticipate that our plant-produced Apo AI_{Milano} may offer the potential to overcome the manufacturing challenges of traditional fermentation-based technologies which we believe are a major issue that has impeded the large scale commercial development of Apo AI_{Milano}.

We advanced our preclinical data for this promising compound during the year by completing an *in vivo* study in an animal model with a leading third party contract research organization. The purpose of the study was to demonstrate that plant-derived Apo AI_{Milano} is capable of facilitating Reverse Cholesterol Transport (RCT). RCT is the process by which cholesterol is moved from the blood vessels to the liver and is then excreted from the body. This study was undertaken to demonstrate the functionality of our plant-produced Apo AI_{Milano} product in reverse cholesterol transport (RCT) in an *in vivo* model. The final results of the study confirmed product functionality showing a statistically significant increase in RCT in treated animals versus controls.

In the second half of 2010, a well-recognized cardiologist completed an *in vitro* study with our Apo AI_{Milano} material that had been formulated in-house. The results showed cholesterol efflux (a critical part of RCT) comparable to that previously reported for Apo AI_{Milano} produced from other manufacturing systems or obtained from human carriers, further confirming the functionality of our plant-derived product.

In addition, we successfully planted and harvested another substantial field grow out of Apo AI_{Milano} line during the year. We plan to use the seed harvested, together with our existing supply, to continue improving and scaling up our pilot scale manufacturing process to further our program development. We currently have sufficient seed available to meet protein requirements for the completion of pre-clinical and toxicology studies to support the filing of an investigational new drug application to the US FDA and conduct initial clinical trials.

We continued to advance our Apo AI_{Milano} partnering process during the year. We are at various stages of discussions with multiple parties that have the experience, financial resources and presence in the appropriate markets to assist in the successful development and commercialization of this product.

It is our goal to form a development partnership and move this exciting drug candidate into clinical development. We remain actively engaged in late stage discussions relating to forming such a partnership. We have identified two potential categories of partner for the program:

- (i) large global pharmaceutical companies with strong cardiovascular franchises that have the financial capabilities to fund the full development program and the sales and marketing resources to successfully commercialize the program on a global basis; and
- (ii) a small number of specialized biotechnology companies bringing particular knowledge and experience of the Apo AI_{Milano} development program. The goal with these companies would be to have them fund the development program through at least Phase II clinical development before working jointly to secure a late-stage development and commercialization partnership with one of the category (i) companies above.

Next steps for our Apo AI_{Milano} program include: the further development of a pilot-scale manufacturing process; optimization of the formulation and scale-up of the formulation process; the completion of additional *in vivo* studies; and completion of partnership discussions as outlined above with the intent to complete a partnering transaction prior to initiating the toxicology leading to an IND submission and clinical studies.

Gamma Linolenic Acid

In collaboration with our partner, Arcadia Biosciences, Inc. ("Arcadia") we used our technology platform to develop safflower oil with high expressing omega-6 fatty acid gamma linolenic acid ("GLA"). GLA is an essential fatty acid with use in topical, medical food and nutrition products. We previously achieved all of the development milestones in our partnership and Arcadia is now responsible for field production and commercialization. Arcadia has successfully completed the first commercial production of SONOVA™ 400 High GLA Safflower Oil which was launched at the beginning of the year.

We earned our final milestone payment from Arcadia in the first quarter of 2010, as they obtained regulatory approval. We also received our first royalty payment in 2010 and now anticipate receiving ongoing royalties from Arcadia on GLA-associated commercial product sales.

Chymosin

We have an exclusive commercial license agreement with Instituto de Agrobiotecnología Rosario S.A. (INDEAR). The agreement pertains to the commercialization and supply of SemBioSys' safflower-produced chymosin, a protein used in the manufacture of food products. In exchange for an upfront technology access fee, SemBioSys has granted INDEAR an exclusive royalty-bearing license to SemBioSys' technology in Argentina. INDEAR will use SemBioSys' technology to extract chymosin from modified safflower seeds and sell the protein for use in the manufacturing of cheese in Argentina. Under the terms of the agreement, SemBioSys has granted INDEAR a time-limited right of first refusal to expand the territory beyond Argentina which expired in 2010.

We are eligible to receive ongoing royalties from INDEAR on Chymosin-associated commercial product sales.

CORPORATE REORGANIZATION

SemBioSys Genetics Inc. ("SemBioSys"), ("the Company") ("New SemBioSys Amalco") was formed on December 18, 2009 when 1491277 Alberta Ltd. ("New SemBioSys") and 1491265 Alberta Ltd. ("New Subco") amalgamated.

On December 18, 2009, the predecessor entity to SemBioSys (also previously named SemBioSys Genetics Inc. and now named Cathedral Energy Services Ltd.) ("Old SemBioSys") completed a plan of arrangement (the "Arrangement") involving, amongst others, SemBioSys, Cathedral Energy Services Income Trust ("Cathedral"), Cathedral Energy Services Ltd., New SemBioSys and New Subco. Pursuant to the Arrangement, the assets and liabilities of Old SemBioSys, as they existed immediately prior to the Arrangement, with the exception of certain future tax assets were transferred to New Subco. The rights holders of Old SemBioSys exchanged their common shares, stock options, warrants and deferred stock units of Old SemBioSys for common shares, stock options, warrants, and deferred stock unit of New SemBioSys on a one-for-one basis. The Company carried on the business of Old SemBioSys as it existed immediately prior to the Arrangement. The board of directors and management of Old SemBioSys continued on as the board of directors and management of New SemBioSys.

As the transfer of the business assets, liabilities and operations to SemBioSys (through the transfer of one of its predecessor companies, New Subco) pursuant to the terms of the Arrangement represented a transaction with no substantive change in shareholder ownership, the transaction was accounted for using continuity of interest accounting. Accordingly, the consolidated financial statement information included in these financial statements reflect that of the Company as if it had always carried on the business formerly carried on by Old SemBioSys. SemBioSys continues to carry on its primary business of manufacturing high-value proteins and oils in plant seeds using its unique proprietary platform.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The preparation of consolidated financial statements in accordance with Canadian generally accepted accounting principles requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of revenue and expenses during the reporting period. We believe that the estimates and assumptions upon which we rely are reasonable and are based upon information available at the time the estimates and assumptions were made. Actual results could differ from our best estimates and assumptions as additional information becomes available. Significant estimates are made for the determination of recognized revenue, recoverability of accounts receivable, fair value of the investment, the useful life and impairment of property and equipment, stock-based compensation, warrants, ability to recognize future tax assets and the estimated timing of future milestone payments to estimate the interest rate of the AVAC long-term debt.

The significant accounting policies that we believe are the most critical to aid in fully understanding and evaluating our reported financial results include the following:

Revenue Recognition

Licensing fee revenue from arrangements which require no future significant involvement or obligation to perform under the arrangement are recognized at the date the license is granted, if there is persuasive evidence of an arrangement, collection of the resulting receivable is reasonably assured, the fee is fixed or determinable, delivery has occurred and the contract has commenced. Similarly, non-refundable milestone payments are recognized upon the achievement of specified milestones and we have no further significant involvement or obligation to perform under the arrangement.

Licensing fee revenue (initial fees and milestone payments) derived from collaborative licensing arrangements which require our unspecified ongoing involvement are deferred and amortized into income on a straight-line basis over the expected period of our ongoing involvement. Licensing fee revenue (initial fees and milestone payments) derived from collaborative licensing arrangements which require our specified ongoing involvement are deferred and amortized into income using the percentage completion method based on the period of our ongoing involvement.

Contract research revenue for cost plus margin arrangements are recognized as the services are performed. Upfront payments under these arrangements are deferred and revenue is recognized over the life of the contract as services are performed. Contract research revenue related to milestone agreements are recorded based on the relative effort expended to achieve the specific milestone using the percentage completion method assuming the milestone is achieved and the probable economic benefits will flow to the entity. Under this method the revenue recognized is the lower of the cash to be received upon achievement of the milestone and the results using a percentage completion model.

Royalty revenue is based on a percentage of sales of certain declared products sold by third parties. Such revenue will be recorded when we have fulfilled the terms in accordance with the contractual agreement, have no future obligations, the amount of the royalty fee is determinable and collection is reasonably assured.

Cost Recovery Agreements and Government Assistance

Cost recovery agreements relate to various government programs whereby we are contracted to complete research projects and are reimbursed for research costs related to the specified project. The contribution agreements have specific milestones that must be completed under the terms of the agreements. Upfront payments are deferred and recognized into income using the percentage completion method. Milestone payments are recognized when the milestones have been achieved.

Research and Development Costs

Research costs are expensed as incurred. Development costs that meet specific criteria for deferral under Canadian generally accepted accounting principles will be capitalized. No development costs have been deferred to date.

Intellectual Property Costs

Intellectual property costs include patent costs and other costs such as legal opinions, licensing fees and royalties. These costs are expensed as incurred given that the expected future benefits of the costs are too uncertain to justify asset recognition.

FUTURE ACCOUNTING PRONOUNCEMENTS

Transition to International Financial Reporting Standards

The CICA confirmed that accounting standards in Canada will converge with International Financial Reporting Standards ("IFRS"), as issued by the International Accounting Standards Board. We will begin reporting under IFRS in the first quarter of 2011, with comparative data for the prior year, including an opening balance sheet as at January 1, 2010. IFRS uses a conceptual framework similar to Canadian generally accepted accounting principals, but there could be significant differences in recognition, measurement and disclosures that will need to be addressed. In order to meet the requirement to transition to IFRS, we have established a transition plan comprised of three phases:

- Diagnostic assessment phase – This phase involves performing a high level diagnostic assessment to identify key areas that may be impacted by the transition to IFRS. As a result of the diagnostic assessment, the potentially affected areas are ranked as high, medium or low priority.
- Education, evaluation and design phase – During this phase each area identified in the diagnostic assessment phase will then be addressed in order of descending priority and will involve specifying changes required to existing accounting policies, information systems and business process, together with an analysis of policy alternatives allowed under IFRS.
- Implementation and integration phase – In this phase changes to information systems and business processes will be completed, including any changes required to ensure the integrity of internal control over financial reporting and disclosure controls and procedures. At the end of the implementation and integration phase we will be able to compile financial statements compliant with IFRS.

To date, we have started the initial assessment of the key areas where changes to current accounting policies may be required. While analysis will be required for all current accounting policies, the initial key areas identified for detailed analysis, which are also the areas we expect have the most significant impact on the financial statements of the Company include:

- IFRS 1
 - IFRS 1 provides the framework for the first-time adoption of IFRS and specifies that an entity shall apply the principals under IFRS retrospectively. Certain optional exemptions and mandatory exceptions to retrospective application are provided under this framework. We are currently working on our analysis of IFRS 1 with respect to the elective exemptions available.
- Stock option plans and share based payments
 - IFRS 2 “Share-based Payments” is substantially converged with Canadian General Accepted Accounting Principles (“GAAP”). However, Canadian GAAP allows the use of either the straight-line or the accelerated methods to amortize graded-vesting features where as Under IFRS only the accelerated or graded vesting methods are allowed. The Company uses the straight-line method for equity-classified awards issued and expects to adopt the graded vesting method. Also, Canadian GAAP permits companies to either estimate forfeitures at the time of grant, or record the entire expense as if all options vested at the time of grant and record forfeitures as they occur where as, IFRS 2 requires companies to estimate the forfeiture at the time of grant. These differences are expected to impact the accounting of the Company’s incentive plans.
- Cost recoveries and government assistance
- Convertible debentures
- Financial Statement Presentation and Disclosure
- Property, plant and equipment

This list is not exhaustive and should not be regarded as complete. As we progress further into our analysis we may identify other areas that will have a significant impact on the financial statements of the Company. The Company expects to meet its reporting timelines for IFRS reporting.

SELECTED ANNUAL INFORMATION

	2010	2009	2008
	\$	\$	\$
Revenue - continuing operations	479,516	1,571,114	50,110
Interest income - continuing operations	3,821	9,427	343,582
Net loss - continuing operations	8,260,239	6,492,390	18,725,014
Net loss - discontinued operations	-	96,492	4,212,127
Net loss	8,260,239	6,588,882	22,937,141
Loss per share, basic and diluted - continuing operations	0.17	0.19	0.72
Loss per share, basic and diluted - discontinued operations	0.00	0.00	0.16
Loss per share, basic and diluted	0.17	0.19	0.88
Total assets - continuing operations	3,034,688	8,104,237	8,424,304
Total assets - discontinued operations	-	-	6,704,800
Total assets	3,034,688	8,104,237	15,129,104
Total long-term financial liabilities - continuing operations	758,815	-	253,963
Total long-term financial liabilities - discontinued operations	-	-	4,373,876
Total long-term financial liabilities	758,815	-	4,627,839

Revenues increased in 2009 as compared to 2008 primarily from the licensing option fees received from an option agreement related to our insulin program. The licensing option fees received were a one time fee and consequently revenues decreased in 2010. In both 2009 and 2010, we recognized revenue related to our agreement with Arcadia for our GLA program.

Our net loss decreased in 2009 as a result of completing the insulin clinical trials in the first quarter of the year, combined with the savings realized from our cost reduction programs implemented in the fourth quarter of 2008 and third quarter of 2009. The net loss was further offset by a one time gain on the exchange of shares as part of the corporate reorganization and a gain on the disposal of our remaining shares of Botaneco. Consequently our net loss increased in 2010 as there was no gain on exchange of shares or on the disposal of Botaneco to offset a portion of the net loss. Furthermore, a one time non-cash expense of \$735,000 was recorded in intellectual property as a result of renegotiation certain terms of our existing technology license agreement with UTI Limited Partnership ("UTI").

The further in long-term financial liabilities in 2009 relates to the repayment of loans in connection with the corporate reorganization and the classification of the AVAC funding as short term. The increase in long-term financial liabilities 2010 relates to the convertible debentures issued to UTI as part of the renegotiation of certain terms in our existing technology license agreement.

RESULTS OF OPERATIONS – Comparison of years ended December 31, 2010 and 2009

Our audited consolidated financial statements and related notes for the year ended December 31, 2010 include the accounts of the Company and our wholly-owned subsidiary, SemBioSys Genetics Corporation, a non-operating U.S. subsidiary.

Our operations are focused on our lead pharmaceutical candidates, Apo AI_{Milano} and Biosimilar Insulin, in addition to our nutritional oil, GLA and food additive, Chymosin. Revenues currently include licensing fees revenue from the out-licensing of our technologies, as well as contract

research revenue earned from collaborations with our partners and the costs related to these activities.

Revenue

	2010 \$	2009 \$	Change \$	Change %
Licensing fees	315,789	307,048	8,741	2.8
Contract Research	151,715	102,571	49,144	47.9
Royalty Revenue	12,012	-	12,012	100.0
Licensing option fees	-	1,161,495	(1,161,495)	(100.0)
	479,516	1,571,114	(1,091,598)	(69.5)

Licensing fee revenue is derived from collaborative licensing arrangements for the use of our technology. Licensing fees for the year ended December 31, 2010 and December 31, 2009 relates to our agreement for our GLA program. We are eligible for ongoing royalties from this agreement on GLA-associated commercial product sales.

Contract research revenue is earned from collaborative research agreements that involve a scientific work plan which also generally include payments for the achievement of specified milestones. Contract research revenue for the years ended December 31, 2010 and December 31, 2009 relates to work carried out on collaborations related to the use of our technology.

Royalty revenue is earned based on a percentage of sales of certain products sold by third parties that were made using technology the Company sublicensed to them. For year ended December 31, 2010 substantially all royalties relate to Botaneco's products sales.

Licensing option fee revenue is derived from arrangements whereby third parties are provided the option to enter into an agreement for the use of our technology. We had no licensing options fees during the year ended December 31, 2010. Licensing option fees for the year ended December 31, 2009 relate entirely to an option agreement entered into in the fourth quarter of 2008. The option period to license these rights ended March 31, 2009 with no action from the counterparty and therefore we will not receive any further revenue from this agreement.

Expenditures

	2010 \$	2009 \$	Change \$	Change %
Research and development (<i>net of scientific research & experimental tax credits \$318,994 (2009 - \$nil)</i>)	3,512,564	6,093,515	(2,580,951)	(42.4)
General and administration	1,202,898	1,619,930	(417,032)	(25.7)
Intellectual property	1,643,015	941,583	701,432	74.5
Business development	443,423	518,955	(75,532)	(14.6)
Stock-based compensation	466,071	682,791	(216,720)	(31.7)
Amortization	1,366,501	1,471,361	(104,860)	(7.1)
Cost recoveries	(325,258)	(57,805)	(267,453)	(462.7)
	8,309,214	11,270,330	(2,961,116)	(26.3)

During the third quarter of 2009, we implemented cost reductions, in response to the continuing challenges in the capital markets. Cost reductions were also implemented in the third quarter of 2010 to extend the Company's current runway. The cost reductions included a decrease in headcount and the refocusing of our Biosimilar Insulin and Apo A1_{Milano} programs to prioritize

current resource effort on the continuation of partnership discussions. Although this involved a headcount reduction, the Apo AI_{Milano} and Biosimilar Insulin programs remain on-track. The headcount reduction still allows us to maintain the core competencies necessary to reach our near-term milestones for the Apo AI_{Milano} and Biosimilar Insulin programs.

Research and development (“R&D”) costs continue to represent our largest expenditure area, as expected. R&D costs relate primarily to the preclinical and development work we are performing for our Apo AI_{Milano} and Biosimilar Insulin programs, and consist mainly of the salary and benefit costs of all R&D staff, overhead costs related to R&D such as rent and utilities, laboratory supplies costs, independent consultants, contract research organizations (“CRO”) and field planting costs. The significant decrease in R&D costs for the year ended December 31, 2010, over the comparable year ended December 31, 2009, is primarily related to the shift in the stage of development of our insulin program and the cost reductions implemented in the third quarter of 2009. The majority of the post-clinical work necessary for our insulin clinical trial was completed during the first quarter of 2009 while the analytics relating to the clinical trial were completed in the second quarter of 2009. This stage in our Biosimilar Insulin program required significant external resources to prepare the statistical analysis and summarize the results of the clinical trial. The external resources required in the third quarter of 2009 decreased as the tasks related to the clinical trial lessened. In addition, the progress made in our Apo AI_{Milano} program also required external resources. As a result, expenditures during the first quarter of 2009 for CRO costs, statistical analysis and other outsourcing costs, personnel and the associated support costs and laboratory supplies related to preclinical and post-clinical activity were substantially higher than those incurred in 2010. The downsizing in the third quarters of 2009 and 2010 also contributed to the decrease.

R&D costs in 2010 were further reduced by the refundable scientific research & experimental development (“SR&ED”) tax credits received during the year. SR&ED tax credits are provincial and federal tax credits that are earned as a percentage of eligible current and capital research and development expenditures incurred in each taxation year. In 2009 the Alberta government created a new provincial SR&ED program whereby the tax credits earned are refundable. We filed an SR&ED claim under the Alberta government’s newly created program in June 2010 for the fiscal year ended December 31, 2009. We received the cash refund during the third quarter of 2010.

We anticipate that although overall R&D costs will remain our highest expenditure area, such costs will remain consistent with 2010 spending levels. Our activities are focused to those essential to the achievement of our partnering objectives and all R&D costs related to non-core programs are minimal. If we are able to partner our Biosimilar Insulin or Apo AI_{Milano} programs, we will likely benefit as ongoing R&D costs should be primarily funded by our partner or partners.

General and administration (“G&A”) expenses include the costs related to corporate and consulting personnel, directors’ fees and legal and professional fees associated with our public filings including our annual audit, all costs associated with investor relations, and human resources. As expected the G&A costs for the year ended December 31, 2010 decreased slightly. The decrease in G&A for the year ended December 31, 2010 compared to year ended December 31, 2009 is due primarily to the cost reductions implemented in the third quarters of 2009 and 2010 which included a reduction in head count and decreased salaries and benefits for all remaining personnel. We expect G&A costs to decrease slightly in 2011 from those incurred in the third quarter of this year.

Intellectual property (“IP”) costs consist mainly of legal costs associated with license fees for use of third-party intellectual property, the maintenance and prosecution of our patents, the salary and benefit costs of IP personnel and royalty payments due to third-parties based on our revenue earned from products or processes that use third-party intellectual property. IP costs increased significantly, in the year ended December 31, 2010 compared to 2009, as the result of renegotiating certain terms of our existing technology license agreement with UTI Limited

Partnership (“UTI”). The renegotiated license agreement provides SemBioSys the unilateral right to assign the agreement to another company in the event of a sale of the Company. In exchange for this right and other concessions, the Company agreed to pay an upfront fee of \$110,000, transfer some of its existing investments and issue convertible debentures in the amount of \$625,000 to the Licensor all of which was recorded as intellectual property costs. Royalty payments and costs relating to patent maintenance and prosecution do not occur uniformly; however, we expect IP costs to decrease from those experienced in 2010.

Business development (“BD”) costs include the salary and benefit costs and consulting fees of the personnel responsible for promoting our products and technology platform including initiating partnership discussions, analysing product candidates and our in-licensing strategy, and the costs related thereto. BD costs in 2010 increased from the comparable period in 2009 as a result of increased overseas travel expenses associated with partnership activities. We expect our BD activities to remain consistent with 2010 spending as our Insulin and Apo products progress further along in their commercialization and we broaden our partnership activities.

Stock-based compensation costs relate to the estimated fair value of stock options granted to employees, directors and consultants. Expenses are amortized over the vesting period which ranges from immediate vesting upon issuance up to a maximum of five years. The decrease in stock-based compensation expense for the year ended December 31, 2010 over the year ended December 31, 2009 results primarily from the forfeiture of options resulting mainly from the decrease in head count in third quarter of 2009 and 2010 and several personnel changes in the first quarter of 2010. The decrease was offset by the additional grant of options to SemBioSys’ employees and consultants in October of 2009 and June of 2010. Option grants are discretionary, and therefore are expected to vary period over period depending on overall performance.

Amortization expense is based on the estimated useful lives of our assets. There have been no significant capital purchases in 2010, as planned to minimize our costs, and as a result, amortization expense for the year ended December 31, 2010, is consistent to that of the prior year. We expect overall amortization expense will be consistent for 2011 as no significant capital purchases are currently anticipated.

Expenses are partially offset by cost recoveries. In November 2010, we amended the existing Insulin agreement with AVAC such that AVAC would provide an additional \$500,000 of non-dilutive funding on the basis of achieving specific predetermined milestones. The first \$250,000 was received in the fourth quarter of 2010 and the second \$250,000 was received subsequent to year-end. Cost recoveries in 2010 consist of mainly of the \$250,000 received from AVAC but also include funded wage programs from specific government programs as well as costs recovered from prospective partners for material shipped to them in order for them to complete testing on. Cost recoveries in 2009 consist solely of funded wage programs from specific government programs.

Interest and Other Income (Expenses)

	2010	2009	Change	Change
	\$	\$	\$	%
Interest expense	(370,545)	(210,648)	(159,897)	(75.9)
Interest income	3,821	9,427	(5,606)	(59.5)
Foreign exchange gain	4,282	50,621	(46,339)	(91.5)
Gain on sale of property and equipment	179,723	-	179,723	100.0
Gain on exchange of shares	-	2,941,981	(2,941,981)	(100.0)
Gain on sale of shares	-	415,445	(415,445)	(100.0)
Realized loss on disposal of investment	(247,822)	-	(247,822)	(100.0)
Other income (loss)	(430,541)	3,206,826	(3,637,367)	(113.4)

The increase in interest expense for the year ended December 31, 2010 over that of the prior year results mainly from the accrual of interest on funding received from AVAC in the second and fourth quarters of 2009 and the interest accrued on the convertible debentures issued in the second quarter of 2010.

In the fourth quarter of 2010, we sold some field equipment to that we were no longer using. We recorded a gain on sale of \$179,723 on the disposal of this equipment.

As part of the corporate reorganization in 2009 we recorded a gain on exchange of shares, when the shares of Old SemBioSys were exchanged for shares of New SemBioSys. The cash consideration of \$2,845,629, marketable securities of \$825,000 (immediately sold for net proceeds of \$856,300) and related transaction costs of \$759,948 were recorded as a gain on exchange of shares of \$2,941,981.

We recorded a gain on sale of shares in 2009 when we provided Botaneco with a small amount of bridge financing (\$19,350), until the Advitech transaction closed, by purchasing a convertible debenture. When the Advitech transaction closed in November 2009 our debenture automatically converted into shares which were then purchased by Advitech. The Advitech shares we received in exchange for our Botaneco shares were recorded at fair market value, which resulted in a gain on sale of shares in the amount of \$415,445 being recorded.

We realized a loss on the disposal of a portion of our investment, for the year ended December 31, 2010, when under the terms of the amended UTI license agreement we transferred a portion of our investment in Advitech to UTI as well as sold the remaining portion of the investment on the open market.

**SUMMARY OF QUARTERLY FINANCIAL INFORMATION
(UNAUDITED)**

	2010				2009			
	\$							
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1
Revenue - continuing operations	6,038	5,974	111,039	356,465	94,880	24,540	290,199	1,161,495
Interest income - continuing operations	552	1,262	1,985	22	1,798	131	2,084	5,414
Net income (loss) - continuing operations	(1,588,542)	(1,715,947)	(2,891,999)	(2,063,751)	1,052,702	(2,472,008)	(2,615,412)	(2,457,675)
Net income (loss) - discontinued operations	-	-	-	-	-	2,544,986	(1,270,700)	(1,370,778)
Net income (loss)	(1,588,542)	(1,715,947)	(2,891,999)	(2,063,751)	1,052,702	72,978	(3,886,112)	(3,828,453)
Earnings (loss) per share, basic and diluted - continuing operations	(0.03)	(0.03)	(0.06)	(0.05)	0.03	(0.07)	(0.09)	(0.09)
Earnings (loss) per share, basic and diluted - discontinued operations	-	-	-	-	-	0.07	(0.04)	(0.05)
Earnings (loss) per share, basic and diluted	(0.03)	(0.03)	(0.06)	(0.05)	0.03	-	(0.13)	(0.14)

Revenue in the first quarter of 2009 is entirely comprised of licensing option fees received from MannKind for their option agreement related to our insulin program. The option expired on March 31, 2009 with no action by MannKind, therefore there will not be any future revenue from this agreement. Revenue in the second quarter of 2009 relates primarily to our agreement with Arcadia for our GLA program. Revenue in the third and fourth quarter of 2009 relates to miscellaneous contract research work carried out on collaborations related to the use of our technology. We recognized our final milestone payment from Arcadia in the first quarter of 2010. We are also eligible for additional milestones and ongoing royalties from Arcadia on GLA-associated commercial product sales. The revenue in the second quarter relates primarily to contract research work performed. Revenues in the third and fourth quarter of 2010 relate to royalty payments received.

Interest income decreased in the beginning in the second quarter of 2009 and has remained low as a result of our increased net cash burn and lower cash balance. The interest rate we earned decreased throughout 2009, further contributing to the decrease in interest income in 2009.

The net loss in the first, second and third quarters of 2009 remained relatively consistent. The net income in the fourth quarter of 2009 resulted from two isolated events. First, we recorded a gain of \$2.9 million on the corporate reorganization and secondly, we also recorded a gain of \$415,000 on the disposal of our Botaneco shares to Advitech. As these events were not repeated, the net loss in the first quarter of 2010 increased although it was lower than the loss experienced in the third quarter of 2009 resulting primarily from cost reductions implemented in the third quarter of 2009. The increase in net loss experienced in the third quarter of 2010 resulted from a one time non-cash expense of \$735,000 was recorded in intellectual property as a result of renegotiation certain terms of our existing technology license agreement with UTI. As this was a one time event, the net loss in the third quarter decreased substantially.

Fourth Quarter 2010

Revenue in the fourth quarter of 2010, relates to royalty revenue that was recognized and remained consistent with the third quarter. Interest income decreased slightly in the fourth quarter as a result of the lower cash balance. The net loss in the fourth quarter decreased as a result of further cost reductions implemented at the beginning of the third quarter of the year. We would expect a loss consistent with that of the fourth quarter as we realize the further cost savings from our cost reduction program implemented in the third quarter of 2010, slightly offset by an increase in R&D activities for the ramp up of our Apo AI program and a slight increase in BD activities associated with partnering our programs.

LIQUIDITY AND CAPITAL RESOURCES

At December 31, 2010, we had cash and cash equivalents of \$267,436 as compared to December 31, 2009 when we had cash and cash equivalents of \$3,687,548. The decrease in cash during the period resulted primarily from our net cash burn offset by the proceeds received relating to the private placement completed in March 2010, the proceeds received from our SR&ED claim in August 2010 and the non-dilutive financing received from AVAC in November 2010. Total short-term debt and convertible debentures were \$2,665,176 at December 31, 2010 compared to \$1,534,535 at December 31, 2009. The increase in debt relates mainly to the \$730,000 of convertible debentures issued in the second half of 2010 to UTI Limited Partnerships as part of the consideration paid to renegotiate certain terms of our existing technology licence agreement.

At December 31, 2010, we had a net negative working capital balance of \$2,180,556 as compared to December 31, 2009 when we had a positive net working capital of \$1,595,217. The decrease in working capital is primarily due to the increase in the short term portion long-term debt resulting from the accrued interest on the \$1,350,000 of funding SemBioSys received from AVAC in 2009 that is secured by certain SemBioSys assets. Also contributing to the decrease is the reduction in the cash balance and the sale of our investment. Prior to year-end negotiations were initiated with AVAC regarding repayment of the outstanding investment and accrued interest of \$1,848,329. An amending agreement comprising repayment of the outstanding investment through royalties earned from the commercialization of certain non-pharma product revenue streams is being concluded between the Company and AVAC. Additionally, AVAC has agreed to subordinate its security interest with respect to the Company's intellectual property assets to a third party. As a result a significant portion of the investment would be reclassified from short-term debt to long-term debt. We successfully filed a Scientific Research and Experimental Development (SR&ED) claim under the Alberta government's newly created program and received \$318,994 of refundable tax credits in August 2010. We estimate as of December 31, 2010 we have additional SR&ED refundable credits accumulated of \$231,000 which would further enhance our working capital had we accrued for these.

On March 3, 2010, pursuant to a private placement, the Company issued 10,163,398 shares at a price of \$0.175 per share for total gross proceeds of \$1,778,595 before issue costs of \$147,196.

In November 2010, the agreement with AVAC for the Insulin program was amended such that AVAC would provide an additional \$500,000 of funding on the basis of achieving specific predetermined milestones. The first \$250,000 was received in the fourth quarter of 2010 and the second \$250,000 was received subsequent to year-end. The repayment terms were also amended, which resulted in advances being repayable in the form of a 3% royalty on all gross revenues until the total royalties paid to AVAC reach \$6 million.

As discussed previously in the MD&A, subsequent to the end of the year, we closed a \$4 million financing. The financing consists of bonds with an aggregate face value of \$4 million (the "Bonds") and detachable warrants (the "Warrants") to purchase common shares of the Company. This financing further enhanced our working capital and extended our runway.

Our investment activities are subject to the guidelines contained in our investment policy. We invest only in liquid, high-grade investments from highly rated financial institutions.

Our primary capital needs are for funds to support our scientific research and development activities and development activities to commercialize our products. We expect our expenditures to decrease in 2011 due the measures announced by the Company on September 24, 2010 to extend our runway. Our ability to accomplish all of our future strategic plans is dependent upon

the achievement of successful partnership collaborations, obtaining additional investment capital, the realization of assets, obtaining grant monies and the improvement of cash flow from operations; however, there is no assurance that we will achieve these objectives

To date, we have had no net earnings, minimal revenue and negative operating cash flows, which are expected to continue in at least the near term. Since inception, we have financed our cash requirements primarily through issuances of securities, cost recoveries, licensing fees, licensing option fees, contract research revenues, investment tax credits, government funding, long-term debt, and interest income. As such, our ability to continue as a going concern is dependent on the achievement of successful partnership collaborations obtaining additional investment capital, the monetization of certain assets, and the improvement of cash flow from operations. We may look to fund additional capital requirements through the issuance of additional equity or convertible debentures, through long-term debt for our capital asset purchases, through additional government funding or other means. We will continue to avail ourselves to strategic partnering activities and funding opportunities, however, there can be no assurance that we will be successful in raising additional investment capital, monetizing assets, discharging liabilities or achieving successful partnership collaborations to generate sufficient cash flows to continue as a going concern and this may require us to reduce or eliminate any or all of our programs. As a result, there is a significant risk regarding our ability to continue as a going concern.

Cash Flows

	2010	2009	Change	Change
	\$	\$	\$	%
<i>Cash flow - continuing operations:</i>				
Operating Activities	(4,996,737)	(7,473,686)	2,476,949	33.1
Financing Activities	1,286,818	9,270,929	(7,984,111)	(86.1)
Investing Activities	289,807	(36,661)	326,468	890.5
Net change in cash - continuing operations	(3,420,112)	1,760,582	(5,180,694)	(294.3)
<i>Cash flow - discontinued operations:</i>				
Operating Activities	-	(2,081,450)	2,081,450	100.0
Financing Activities	-	951,576	(951,576)	(100.0)
Investing Activities	-	(762,956)	762,956	100.0
Net change in cash - discontinued operations	-	(1,892,830)	1,892,830	100.0
Increase (decrease) in cash and cash equivalents	(3,420,112)	(132,248)	(3,287,864)	(2,486.1)

Operating Activities – Continuing Operations

The decrease in cash used in operating activities in the year ended December 31, 2010, in comparison to the year ended December 31, 2009, is due to factors consistent with those that impacted net loss, as described earlier. We expect cash used in operating activities in 2011 to remain lower than 2010 due to the implementation of the cost reductions previously discussed and the attempts to extend cash runway announced in September 2010.

Financing Activities – Continuing Operations

Cash provided by financing activities in the year ended December 31, 2010 consists mainly of the issuance of shares in the March 2010 private placement which provided gross cash proceeds of \$1,778,595, offset by the share issue costs related to the placement, additional cash expenses related to the corporate reorganization and the repayment of debt. Cash provided by financing activities in the year ended December 31, 2009 consists mainly of \$3,598,872 of units (net of \$553,997 of cash based issue costs) issued pursuant to the public offering in July of 2009. Cash provided by financing activities also included \$1,708,688 of units (net of \$43,312 of issue costs) issued to MannKind in January of 2009 and \$950,000 of funding received under SemBioSys' agreement with AVAC, offset by our repayment of debt during the period.

As at December 31, 2010, we have not entered into any off-balance sheet arrangements or hedging arrangements.

Investing Activities – Continuing Operations

Cash provided by investing activities in the year ended December 31, 2010 relates to the disposition of our investment in Advitech and the sale of some field equipment at the end of the year. Cash used in investing activities for the comparable year ended December 31, 2009 relates to the purchase of property and equipment. At this time, we do not have any plans to make any significant investments in our property and equipment.

CONTRACTUAL OBLIGATIONS AND COMMITMENTS

We have previously entered into operating leases for a corporate head office and lab facility, a warehouse and office equipment with terms ending as late as 2012.

As previously noted, in May of 2009, we entered into an agreement with AVAC for a non-dilutive investment of up to \$1,500,000 for the development of our Apo AI_{Milano}. Repayment was due in November of 2010, or later if mutually agreed to by the two parties. An amending agreement comprising repayment of the outstanding investment through royalties earned from the commercialization of certain non-pharma product revenue streams is being concluded between the Company and AVAC. Additionally, AVAC has agreed to subordinate its security interest with respect to the Company's intellectual property assets to a third party.

As part of the corporate reorganization in December of 2009, we agreed to indemnify Old SemBioSys and its directors, officers, employees and subsidiaries, subject to certain conditions and limitations, for all losses, which it may suffer, sustain, pay or incur arising out of, resulting from, attributable to or connected with any debts, liabilities, commitments or obligations of any nature (whether matured or unmatured, accrued, fixed, contingent or otherwise) of any kind whatsoever resulting from any matters, actions, events, facts or circumstances related to the activities, affairs or business of SemBioSys which occurred prior to December 18, 2009, or relating to New Subco or New SemBioSys which occur on or after December 18, 2009.

Any material breach of the representations and warranties by SemBioSys under the Arrangement Agreement may be subject to a maximum liability of \$3.6 million.

Under a technology licensing agreement previously entered into with UTI Limited Partnership we are required to pay a minimum annual fee in addition to royalties equal to 2% of net sales of products produced using the oilbody-oleosin technology until all issued patents falling under this license expire, and 15% to 25% of all royalties earned from sublicenses, depending upon the percentage royalty we receive from the sublicensee.

Under licensing agreements previously entered into we are required to pay a specific amount upon the commercial launch of products specified in the agreement. As we have not commercially launched any products specified under the agreement to date, timing of these payments is undeterminable.

Under a repayable contribution agreement previously entered into with Technology Partnerships Canada, an agency of the Government of Canada, we are required to repay contributions received in the amount of \$5,484,637 at a rate of 1.5% of gross revenues arising from commercialization of the technology we have developed. The royalty period will continue until the cumulative royalty payments equal \$16.7 million or until December 31, 2014, whichever comes first. After December 31, 2014, the contribution is forgiven.

Under funding agreements previously entered into with AVAC, we are required to repay \$4.8M in the form of a 3% royalty on gross revenues attributable to the commercialization of our antibody products. In November 2010, the agreement with AVAC for the Biosimilar Insulin and Protein A program was amended such that AVAC would provide an additional \$500,000 of funding on the basis of achieving specific predetermined milestones. The repayment terms were also amended, which resulted in advances being repayable in the form of a 3% royalty on all gross revenues until the total royalties paid to AVAC reach \$6 million.

The Company periodically enters into technology license agreements to enable it and its partners to commercialize certain products using its technology platform. In February 2010, the Company entered into a specific commercial license agreement whereby under the terms of the agreement the Company was granted a non-exclusive license for specific patent rights and technology that further enables its proprietary technology platform. In return, the Company is required to pay an upfront fee of and an annual fee each year thereafter, until the expiration of the last patent falling within the licensed patent rights.

On June 7, 2010, SemBioSys renegotiated certain terms of our existing technology license agreement with UTI Limited Partnership ("UTI"). The renegotiated license agreement provides SemBioSys the unilateral right to assign the agreement to another company in the event of the sale of the Company. In exchange for this right and other concessions, the Company agreed to pay an upfront fee of \$110,000, transfer a portion of its existing investment in Advitech and issued \$730,000 of convertible debentures to the Licensor all of which was recorded as intellectual property costs.

The Company transferred 815,574 shares of Advitech to the Licensor at a fair value of \$36,701 which was recorded as an expense in intellectual property. As a result of the disposal of a portion of the investment in Advitech, a \$20,389 loss was realized in net income.

Three convertible debentures were issued to the Licensor, with an aggregate face value of \$730,000. The debentures accrue interest at an annual rate of 7% (non-compounding) and mature on April 12, 2013. The interest is repayable upon maturity of the debentures.

The debentures and accrued interest thereon are convertible at any time, at the holder's option, into common shares of the Company. The number of shares to be issued is determined by dividing the outstanding principal and interest by the five day volume weighted average price of the Common Shares on the TSX. However, the maximum number of common shares that can be issued upon the conversion of the Debentures is 10,200,647 common shares.

Given that the number of equity instruments to be delivered upon conversion of the debentures varies based on the current price of the Company's shares, a compound financial instrument does not exist. As a result, the Debentures have been recorded at their face value at an effective interest rate of 7%. For the year ended December 31, 2010 an interest expense of \$28,815 (2009 - \$nil) has been recorded on the Debentures.

As at December 31, 2010, our minimum payments for the next five years are as follows:

	<1 year	1-3 years	4-5 years	>5 years	Total
Lease commitments	498,297	3,987	-	-	502,284
AVAC funding, including interest	1,848,329	-	-	-	1,848,329
Loan payable	58,032	-	-	-	58,032
Convertible debentures, including interest	-	875,493	-	-	875,493
License fees	198,920	397,840	397,840	397,840	1,392,440
Royalties payable	55,000	110,000	110,000	55,000	330,000
Total	2,658,578	1,387,320	507,840	452,840	5,006,578

RISKS AND UNCERTAINTIES

Additional Capital Requirements

We require significant additional funds for further research and development, planned preclinical trials, regulatory approvals, establishment of pilot scale and commercial manufacturing capabilities and the marketing of our products and product candidates. Our capital requirements depend on the magnitude and scope of our current and anticipated operations; our ability to maintain existing and establish new collaborations; the terms of those collaborations; the success of our collaborators in developing and marketing products under their respective collaborations with us; the success of our contract manufacturers in producing clinical and commercial supplies of our product candidates on a timely basis and in sufficient quantities to meet our requirements; competing technological and market developments, the time and cost of obtaining regulatory approvals; the extent to which we choose to commercialize our future products through our own sales and marketing capabilities; the cost of preparing, filing, prosecuting, maintaining and enforcing patent and other rights and our success in acquiring and integrating complementary products, technologies or companies.

We do not have committed external sources of funding and there is no assurance that we will be able to obtain additional funds on acceptable terms, if at all, especially under the current challenging capital market conditions. In the current economic climate where the capital and other financial markets are extremely difficult to access, our utmost objective is to execute initiatives that will enhance our ability to continue as a going concern. If adequate funds are not available, we may be required to:

- engage in equity financings that would be further dilutive to current shareholders;
- engage in further financings at a valuation that is unfavourable to us;
- delay, reduce the scope of or eliminate one or more of our development programs;
- obtain funds through arrangements with collaborators or others that may require us to relinquish rights to technologies, product candidates or products that we would otherwise seek to develop or commercialize ourselves;
- license rights to technologies, product candidates or products on terms that are less favourable to us; or
- sell or monetize some or all of our assets or intellectual property on terms that are unfavourable to us.

Impact of Current Economic Environment

The global economic crisis and capital market weakness affected virtually all companies and industries. A prolonged continuation of this economic environment could have a significant negative impact on the Company's cash flow, liquidity and partnering activities. The Company may experience pressure to raise additional capital, which brings on the additional risks discussed under "Additional Capital Requirements" in the MD&A. The Company also expects

that the global economic environment may impact the financial condition of some of the Company's current and future partners. The Company will continue to closely monitor its cash flow, liquidity and partnering activities, in an effort to continue as a going concern.

Global financial markets have been subject to increased volatility, with numerous financial institutions having either gone into bankruptcy or having to be rescued by government authorities. Access to financing has been negatively impacted by both the sub-prime mortgage market in the United States and elsewhere and also the liquidity crisis affecting the asset-backed commercial paper market. As such, the Company is subject to counter-party risk and liquidity risk. The Company is exposed to various counter-party risks including, but not limited to: (i) through companies that have payables to the Company; (ii) through the Company's insurance providers; and; (iv) through the Company's lenders; These factors may impact the ability of the Company to obtain loans and other credit facilities in the future and, if obtained, on terms unfavourable to the Company. If these increased levels of volatility and market turmoil continue, the Company's planned growth could be adversely impacted due to lack of venture capital and the trading price of the Company's securities could also be adversely affected.

Early Stage Development

We are at the development stage for our pharmaceutical programs. Significant additional investment will be necessary to complete the development of our key pharmaceutical products and product candidates. There is a risk that such products and product candidates can not be produced in commercial quantities at a reasonable cost and be successfully marketed, it also not known whether our investment in such products or product candidates will be recovered through sales or royalties. Most of the pharmaceutical products and product candidates or processes we are currently developing will not be commercially available for several years and it is possible that key pharmaceutical products may encounter unforeseen difficulties or delays in our operations.

Lack of Product Revenue and History of Operating Losses

To date, we have not recorded any significant revenues from the sale of products or product candidates. We have an accumulated deficit since our incorporation through December 31, 2010 of \$93.9 million. Our deficit is expected to increase in the near term as we continue our product development and, in the case of pharmaceutical proteins, seek future regulatory approval for the sale of our product candidates. Operating losses are expected to be incurred until such time as product sales and royalty payments are sufficient to generate revenues to fund our continuing operations.

Dependence on Collaborative Partners

Our strategy is to enter into collaborative arrangements with partners for the clinical testing, and eventual manufacturing, marketing and commercialization of some of our products and product candidates. For the successful development of our Apo AI_{Milano} and Biosimilar Insulin product candidates, we will need to enter into collaborations for product development, manufacturing and commercialization, pursuant to which we may receive additional funding, including milestone payments. However, there can be no assurance that we will be able to establish such additional collaborations on favourable terms, if at all, or that our current or future collaborative arrangements will be successful. Should we fail to establish arrangements with collaborative partners or should any collaborative partner fail to successfully develop or commercialize any product or product candidate to which we have rights, our business may be adversely affected. Failure of a collaborative partner to continue funding any particular program could also delay or halt the development or commercialization of any products or product candidates arising out of such a program.

Regulation of Drug and Product Approval

Readers should be aware of the risks, problems, delays, expenses and difficulties which we may encounter in light of the extensive regulatory environment in which our business is carried out. Numerous statutes and regulations govern the manufacture and sale of human therapeutic and non-therapeutic products in Canada, the United States and other countries, the intended markets for our products and product candidates. Such legislation and regulation bears upon the approval of manufacturing facilities, testing procedures and controlled research, preclinical and clinical data prior to marketing approval, including adherence to current good manufacturing practice (“cGMP”) standards during production and storage, as well as regulation of marketing activities, including advertising and labelling.

Many of the products, product candidates and processes that we are currently developing require significant development, testing and the investment of significant funds prior to their commercialization. There can be no assurance that any such products, product candidates or processes will actually be developed to a commercial level.

The regulatory environment for biogenerics and biosimilars is uncertain in many parts of the World. Canada and the United States recently brought in regulatory guidelines for the approval of biosimilar products for which we are currently assessing the impact on the Company. In Europe, regulatory guidelines exist for specific biosimilar products: however, these guidelines are subject to interpretation. It is not clear what the final regulatory and reimbursement regime will be, if any, including whether such products will become interchangeable. Final resolution of the issues surrounding regulation, interchangeability and reimbursement is uncertain and the potential for this additional market for our insulin as a biogeneric or biosimilar, timing of the launch of such products, and the potential of partnerships in this specific industry are not determinable. Given the uncertainty surrounding both the regulation and reimbursement of biogeneric or biosimilar products, there can be no assurance that any of our product candidates will be approved at all or, if approved, that they will qualify for reimbursement.

Regulation of Genetically Engineered Plants

We must comply with regulations of the U.S. Department of Agriculture (“USDA”), the Canadian Food Inspection Agency (“CFIA”) and other regulatory authorities for outdoor releases of genetically engineered organisms as well as other products designed for use on or with agricultural products. The USDA and the CFIA prohibit growing and transporting genetically modified plants except pursuant to an exemption or under special permits. In order to obtain the necessary permits, we will be required to demonstrate that we have satisfactory procedures for the growth of our genetically modified plants and for the control of seed stocks, harvested material, processing facilities, and waste material from such plants. There can be no assurance that permits will be granted to us in a timely fashion, if at all. In addition, the conditions to the grant of such permits may be time consuming or expensive for us to fulfill. Furthermore, changes in regulations or policies of the USDA, the CFIA and other regulatory authorities regarding the growth and movement or field release of genetically modified plant hosts could adversely affect our business by increasing the cost of our products and technologies or decreasing consumer demand for those products and technologies or causing governments to prohibit their sale or use. If we fail to comply with such rules or policies, we may be subject to financial loss or be liable for costs incurred as a result of non-compliance. In addition, the regulatory requirements for the outdoor commercial growth of transgenic plants producing pharmaceutical proteins have not been promulgated in the United States, Canada or elsewhere.

Regulation of Animal Health Products and Food Additives

In the manufacturing, marketing and distribution of products containing GLA or chymosin, our strategic partners are, and will be, subject to extensive government regulation in the United States, Canada, Latin America and Asia regarding food additives. Similar regulatory requirements exist in Europe and other countries. Any failure by our collaborators to comply with applicable requirements or obtain regulatory approval could adversely affect the marketing of products developed or licensed by us and our ability to receive product or royalty revenue.

Environmental and other Governmental Regulation

Our discovery and development processes involve the controlled use of hazardous and radioactive materials. We are subject to federal, provincial and local laws and regulations governing the use, manufacture, storage, handling and disposal of such materials and certain waste products. Although we believe that our safety procedures for handling and disposing of such materials comply with the standards prescribed by such laws and regulations, the risk of accidental contamination or injury from these materials cannot be completely eliminated. In the event of such an accident, we could be held liable for any damages that result and any such liability could exceed our resources. We are not specifically insured with respect to this liability.

In addition to environmental regulation, we may be subject to regulations under local, provincial, state, federal and foreign law, including requirements regarding occupational health, safety and laboratory practices. Although we believe that we are in compliance with applicable environmental and occupational health and safety laws and regulations in all material respects and currently do not expect to make material capital expenditures for environmental control facilities in the near-term, there can be no assurance that we will not be required to incur significant costs to comply with such laws and regulations in the future, or that current or future laws or regulations will not have a material adverse affect on our operations, business or assets.

Environmental Risks Associated with Outdoor Plantings

In growing locations throughout the world, we grow directly or contract with third-party growers for our genetically modified safflower seed. This seed is grown outdoors and as such is subject to numerous weather risks, including but not limited to: drought, fire, hail, flooding. These adverse weather conditions have the potential to destroy all or part of a planted crop. The destruction of one of our crops would result in a delay of research and development activities until we can re-plant and harvest the crop. Depending on the amount of the crop destroyed and the amount of genetically modified seed available additional time delays could be incurred as a result of having to scale-up the growing operations to previous level. In addition to the time delays, significant costs would be incurred to re-plant and grow the crop. Where practicable, we attempt to minimize the weather risks by producing seed at multiple growing locations.

Unproven Market and Transgenic Technologies

Much of our strategy is based on the belief that the application of our oilbody-oleosin technology to develop products and product candidates for the markets we are addressing will result in the creation of new, commercially viable products. Notwithstanding our estimated market potential for our products and product candidates, no assurance can be given that these beliefs will prove to be correct owing to, in particular, competition from existing or new products, our cost of goods, expenses and product pricing assumptions, and the yet-to-be established commercial viability of our products and product candidates. Furthermore, the commercial viability of our products is fundamentally dependent upon our ability to develop seed lines and manufacturing processes that result in competitive advantage. Our transgenic technologies for pharmaceutical products

are unproven at a commercial level and there is no guarantee that we will be able to apply our technology platform to develop pharmaceutical products.

Changes in Pharmaceutical Product Reimbursement

The availability of reimbursement by governmental and other third-party payers affects the market for any pharmaceutical product. These third-party payers continually attempt to contain or reduce the costs of healthcare. There have been a number of legislative and regulatory proposals to change the healthcare system and further proposals are likely. Significant uncertainty exists with respect to the reimbursement status of newly approved healthcare products. In addition, third-party payers are increasingly challenging the price and cost effectiveness of medical products. We may not be able to sell our products profitably or recoup the value of our investment in product development if reimbursement is unavailable or limited in scope.

Rapid Technological Change and Competition

The industry in which we operate is characterized by rapid and substantial technological change. There can be no assurance that developments by others will not render our products, product candidates or technologies non-competitive or that we will be able to keep pace with technological developments. Some of our competitors have substantially more financial and technical resources, more extensive research and development capabilities and greater marketing, distribution, production and human resources than we do. Moreover, competitors may develop products before we develop our own products and product candidates and may obtain regulatory approval for such products and product candidates more rapidly than we do. Products and product candidates and processes which are more effective than those that we intend to develop may be developed by our competitors. Research and development by others may render our technology, products and product candidates or processes non-competitive or obsolete.

Completion of Clinical Trials

Before obtaining regulatory clearance for the commercial sale of any of our pharmaceutical product candidates, we must demonstrate through preclinical studies and clinical trials that the potential product candidate is safe and efficacious for use in humans for each target indication. We have successfully submitted our IND and Clinical Trial Application (“CTA”) for Biosimilar Insulin clinical trials and the results from the in-man portion of the single-dose trial are now complete. Results support the potential for SBS-1000 to meet the standards necessary for approval as a Biosimilar Insulin. However, the results from completed preclinical studies and our initial clinical trial may not be predictive of results that will be obtained in large-scale clinical testing, and there can be no assurance that our additional preclinical trials will demonstrate sufficient safety for an New Drug Application (“NDA”) or that longer-term clinical trials will demonstrate sufficient safety and efficacy for approval by regulatory authorities. The failure to adequately demonstrate the safety and efficacy of a product candidate under development could delay or prevent regulatory clearance of the potential product candidate and would have a material adverse effect on our success.

Any drug is likely to produce some toxicity or undesirable side effects in animals and in humans when administered as a monotherapy or in combination with other drugs. There can be no assurance that unacceptable toxicity, adverse events or side effects will not occur at any dose level at any time in the course of toxicological studies or of human clinical trials of our potential product candidates as a monotherapy or in combination with other drugs. The appearance of any unacceptable toxicity, adverse events or side effects in toxicology studies or in clinical trials could cause us or regulatory authorities to interrupt, limit, delay or abort the development of any of our product candidates and could ultimately prevent their clearance by the Biologics and Genetics Therapies Directorate (“BGTD”), European Medicines Agency (“EMA”), FDA or other regulatory authorities, for any or all targeted indications. There can be no assurance that a phase, component or step of a trial will be successful or safely completed allowing a subsequent phase,

step or component of a trial or a trial's design to commence. There is no assurance that the BGTD, the EMA, the FDA or other regulatory authorities will accept a specific protocol or protocol design regardless of phase, steps or components of a phase. In particular, there can be no assurance that the BGTD, the EMA, the FDA or other regulatory authorities will allow us to conduct an abbreviated clinical trial protocol for any of our future product candidates which are follow-on pharmaceutical proteins regardless of our being approved for such a trial path for our insulin. Furthermore, after a trial or phase of a trial has commenced, the BGTD, the EMA, the FDA or other regulatory authorities could place the trial on clinical hold if the BGTD, the EMA, the FDA or other regulatory authorities determine a trial or its design may be unsafe or require clarifications regarding protocol design. If we are placed on clinical hold, there is no assurance the objections or issues will be overcome or resolved and such trial could be postponed and/or terminated. Even after being cleared by the BGTD, the EMA, the FDA or other regulatory authorities, a product candidate may later be shown to be unsafe or not to have its purported effect, thereby preventing its widespread use or requiring withdrawal from the market. There can be no assurance that any product candidates we have developed or will develop will be safe when administered to patients.

The rate of completion of clinical trials will be dependent upon, among other factors, the rate of patient enrolment. Patient enrolment is a function of many factors, including the size of the patient population, the nature of the protocol, competing trials for the same patient population, the proximity of parties to clinical sites, the eligibility criteria for the study and interest of clinical investigators. Delays in planned patient enrolment may result in increased costs, delays or termination of clinical trials, which could have a material adverse effect on their success. In addition, our staff has limited clinical experience and, as a result, will rely on prospective partners or third parties to carry out the clinical trials, which may result in delays in completing clinical trials, or their not being completed at all, if such prospective partners or third parties fail to perform under their agreements with us or fail to meet regulatory standards in the performance of their obligations under such agreements. There can be no assurance that we will be able to submit a new drug application as scheduled if clinical trials are completed or that any such applications will be reviewed and cleared by the BGTD, the EMA, the FDA or other regulatory authorities in a timely manner or at all.

Dependence on Key Personnel

We depend on certain members of our management and scientific staff and the loss of services of one or more of said persons could adversely affect us. It is necessary for us to continue to implement and improve our management systems. While we have been able to attract and retain skilled and experienced personnel in the past, no assurance can be given that we will be able to do so in the future.

Establishment of Internal Drug Development Capabilities

The drug development process is inherently complex. The preparation of cGMP quality material for clinical trials, the design and implementation of those trials and the reporting of those results to the BGTD, the FDA and other agencies require a high level of expertise and experience if this process is to be successful. We have limited personnel within our organization who have such experience. We currently do not anticipate preparing cGMP quality material nor do we anticipate completing clinical trials for our Apo AI_{Milano} or Biosimilar Insulin program without a partner. However, should we chose this path in the future, our limited personnel with internal drug development capabilities could lead to delays in the implementation and completion of clinical trials, or even lead to clinical failure due to poor clinical design or execution.

Lack of Manufacturing Capabilities

We do not have large scale manufacturing facilities to produce our product candidates to support late stage clinical trials or the commercial launch of such products, if they are approved. Although

we have experience in producing pilot plant and smaller scale materials, we are partially dependent on third-party contract manufacturers or prospective partners for the larger scale manufacturing of our product candidates. If we are unable to contract for a sufficient supply of our product candidates on acceptable terms, or if we encounter delays or difficulties in the manufacturing process or in our relationships with manufacturers or prospective partners, we may not have sufficient product to conduct or complete our clinical trials or support preparations for the commercial launch of our product candidates, if approved.

Our reliance on contract manufacturers or prospective partners exposes us to additional risks which include the following:

- potential delays in transferring technology;
- the inability of the contract manufacturers or prospective partners to scale production on a timely basis or to manufacture commercial quantities at reasonable costs;
- delays in scaling-up production to quantities needed for clinical trials and commercial launch or failure to manufacture such quantities to our specifications;
- current and future contract manufacturers or prospective partners are subject to ongoing, periodic, unannounced inspection by the FDA and the corresponding Canadian and international regulatory authorities for compliance with strictly enforced cGMP regulations and similar standards and we do not have control over our contract manufacturers' compliance with such regulations and standards;
- current and future contract manufacturers or prospective partners may not be able to comply with applicable regulatory requirements, which would prevent them from manufacturing products for us;
- if there is a need for us to change to other contract manufacturers, the FDA and other comparable foreign regulators must approve these contractors prior to our use, which would require new testing and compliance inspections. The new contract manufacturers will also have to be educated in, or themselves develop, substantially equivalent processes necessary for the development of our products; and
- the inability of the contract manufacturers or potential partners to fulfill our needs, resulting in the requirement for us to seek new manufacturing arrangements thus causing substantial delays in meeting market demand.

Any of the factors mentioned above could cause us to delay or suspend clinical trials, regulatory submission, required approvals or commercialization of our products under development, entail higher costs and result in our being unable to effectively commercialize our product candidates.

As part of our commercialization strategy, we may also elect to manufacture some or all of our product candidates ourselves. We have limited experience in manufacturing commercial quantities of products and our current facilities are inadequate for large-scale commercial manufacturing. Commencing the manufacture of commercial quantities of products would involve large capital expenditures and the hiring of additional personnel with appropriate experience. There can be no assurance that if we decide to begin the commercial manufacture of products that we would be able to obtain the necessary funds to do so or that we could attract and retain the necessary personnel. In addition, the manufacture of products for human use is subject to extensive regulatory requirements and other industry standard requirements, such as cGMP or current good manufacturing practices. Even if we were to obtain the necessary capital and personnel, there can be no assurance that the manufacturing facility would meet such regulatory and industry standard requirements.

We believe that our primary strength and experience has been in the research and development of new biopharmaceutical products, proteins and oils. In manufacturing our own products, we are subject to the regulatory risks and requirements described above, as well as similar risks regarding delays or difficulties encountered in manufacturing. We may require additional facilities and substantial additional capital to support any such manufacturing undertaken in the future.

There is no assurance that we will be able to manufacture any of our products successfully in accordance with regulatory requirements and in a cost effective manner.

Limited Sales, Marketing and Distribution Experience

We have limited experience in the sales, marketing and distribution of pharmaceutical and non-pharmaceutical products. There can be no assurance that we will be able to establish sales, marketing and distribution capabilities or make arrangements with our collaborators, licensees or others to perform such activities or that such efforts will be successful. To successfully market and distribute any of our products directly, we must either acquire or internally develop a marketing and sales force with technical expertise and supporting distribution capabilities. The acquisition or development of a sales and distribution infrastructure for our products would require substantial resources, which may divert the attention of our management and key personnel and negatively impact our product development efforts.

Patents, Proprietary Rights and Trade Secrets

Our success partly depends on our ability to secure and protect our intellectual property rights and to operate without infringing on the proprietary rights of others or having third parties circumvent the rights owned or licensed by us. The patent positions of pharmaceutical and biotechnology firms, us included, are uncertain and involve complex questions of law and fact for which important legal issues remain unresolved. There can be no assurance that our pending patent applications will result in the issuance of patents or whether we will develop additional proprietary products and product candidates which are patentable. Part of our strategy depends on our ability to secure a patent position around the production of a recombinant protein using our oilbody-oleosin technology platform. There is no assurance that we will be successful in this approach and failure to secure patent protection may have a material adverse effect upon us and our financial condition. Also, we may fail in our attempts to commercialize products and product candidates using currently patented oilbody-oleosin technology without having to license additional patents, such as patents relating to plant transformation or the use of certain plant-specific genetic elements. Moreover, it is not clear whether the patents issued or to be issued to us will provide us with any competitive advantages or if any such patents will be the target of challenges by third parties, whether the patents of others will interfere with our ability to market our products and product candidates or whether third parties will circumvent our patents by means of alternate processes. Furthermore, it is possible for others to develop products and product candidates which have the same effect as our products and product candidates or production technologies on an independent basis or to design around technologies patented by us.

Patent applications relating to or affecting our business have been filed by a number of pharmaceutical and biotechnology companies and academic institutions. A number of these technologies, applications or patents may conflict with our technologies or patent applications and such conflict could reduce the scope of patent protection which we could otherwise obtain or even lead to refusal of our patent applications.

If third parties engage in activities that infringe our proprietary rights, management's focus will be diverted and we may incur significant costs in asserting our rights. We may not be successful in asserting our proprietary rights, which could result in our patents being held invalid or a court holding that the third-party is not infringing our proprietary rights, either of which would harm our competitive position. In addition, there is no assurance that others will not design around our patented technology. Moreover, we may have to participate in interference proceedings declared by the U.S. Patent and Trademark Office, European opposition proceedings, or other analogous proceedings in other parts of the world to determine priority of invention and the validity of patent rights granted or applied for, which could result in substantial cost and delay, even if the eventual outcome is favourable to us. There is no assurance that our pending patent applications, if issued, would be held valid or enforceable.

There is no assurance that we will be able to enter into licensing arrangements on reasonable commercial terms, or develop or obtain alternative technology in respect of patents issued to third parties that incidentally cover our products or production technologies. Any inability to secure licenses or alternative technology could result in delays in the introduction of some of our products or product candidates or even lead to prohibition of the development, manufacture or sale of certain products by us. Moreover, we could potentially incur substantial legal costs in defending legal actions which allege patent infringement, or by instituting patent infringement suits against others.

It is not possible for us to be certain that we are the creator of inventions covered by pending patent applications or that we were the first to file patent applications for any such inventions. No assurance can be given that our patents, once issued, would be upheld by a court, or that a competitor's technology or product would be found to infringe on our patents. Moreover, much of our know-how technology which is not patentable may constitute trade secrets. Therefore, we require our employees, consultants, advisors and collaborators to enter into confidentiality agreements. However, these and other parties may not comply with the terms of their agreements with us and we might be unable to adequately enforce our rights against these people or obtain adequate compensation for the damages caused by their unauthorized disclosure or use. Our trade secrets or those of our collaborators may become known or may be independently discovered by others.

Potential Product Liability

A risk of product liability claims and related negative publicity is inherent in the development of human therapeutics and other products. Product liability insurance is expensive, its availability is limited, and it may not be on terms acceptable to us, if at all. The commercialization of our potential products and product candidates could be inhibited or prevented by an inability to maintain sufficient insurance coverage on reasonable terms or to otherwise protect against potential product liability claims. A product liability claim against us or the withdrawal of a product or product candidates from the market could have a material adverse effect upon us and our financial condition.

While we have obtained product liability insurance, there can be no assurance that such insurance is adequate, that it will continue to be available to us or maintained by us, or that all possible claims that may be made against us will be covered by insurance, especially now that we have entered clinical trials with our insulin program. A partially or completely uninsured claim, if successful and of sufficient magnitude, could have a material adverse effect on us and on our financial condition and results of operations.

Negative Public Reaction to Genetically Engineered Technology

Future commercial success of some of our products and product candidates and the products of some of our collaborators will depend in part on public acceptance of the use of genetically engineered products and product candidates, including drugs, plants and plant products. Claims that genetically engineered products and product candidates are unsafe for consumption or pose a danger to the environment may influence public attitudes, regardless of their veracity. Negative public reaction to genetically modified organisms and products and product candidates could result in greater government regulation of genetic research and resultant products and product candidates, including stricter labelling requirements, and could cause a decrease in the demand for our products and product candidates, even if such products and product candidates do not result from genetically modified organisms.

Foreign Currency Fluctuations

Our U.S. dollar expenditures typically exceed our revenue received in U.S. dollars. In addition, a portion of our debt facility was denominated in U.S. dollars. If the Canadian dollar weakens in the future relative to the U.S. dollar, our Canadian dollar equivalent costs will increase. In addition, as we expand to other foreign countries in the future, there may be an increase in our foreign exchange exposure.

Changes in Interest Rates

We invest our excess cash reserves in investment vehicles that provide a rate of return with little risk to principal. As interest rates change, the amount of interest income we earn will be directly impacted.

Income Tax Matters

We have determined that we are eligible for investment tax credits ("ITCs") on expenditures incurred on scientific research and experimental development ("SRED"). There is a risk that the Canada Revenue Agency ("CRA") could conclude that some or all of the expenditures were not incurred on SRED activities and, therefore, could reduce or disallow claims for ITCs.

TRANSACTIONS WITH RELATED PARTIES

Legal services were provided by a law firm in which a director of the Company is counsel to the firm. The director left the firm effective July 15, 2010 and subsequent to that date is no longer considered a related party. During the period ended July 15, 2010, the Company incurred legal expenses of \$20,063 (year ended December 31, 2009 - \$533,559). These transactions were in the normal course of business and thus are recorded at the exchange amount, which is the amount agreed to by the related parties.

OFF BALANCE SHEET ARRANGEMENTS

There are no off balance sheet arrangements at December 31, 2010.

CONTINGENCIES

There are no contingencies at December 31, 2010.

FINANCIAL INSTRUMENTS AND OTHER INSTRUMENTS

We do not use financial derivatives or "other instruments".

The Company's financial assets and liabilities are comprised of cash and cash equivalents, investment, accounts receivable, accounts payable and accrued liabilities, short-term debt, and convertible debentures.

The Company is exposed to financial risks arising from the normal course of business operations and its financial assets and liabilities. The financial risks include liquidity risk, market risk relating to foreign exchange rates and interest rates and credit risk.

i) Liquidity Risk

Liquidity risk is the risk that the Company will encounter difficulties in meeting its financial liability obligations. The Company manages its liquidity risk by keeping surplus cash in

highly liquid securities of highly-rated financial institutions. This allows the Company to earn modest interest rates on surplus cash while also having access to it in a very short time frame.

The Company forecasts its cash needs on a regular basis and seeks additional financing based on those forecasts. Since inception, the Company has financed its cash requirements primarily through issuances of securities, cost recoveries, licensing fees, licensing option fees, contract research revenues, investment tax credits, government funding, long-term debt, and interest income. Our expenditures are expected to remain consistent with those incurred in the second quarter of this year. The Company's ability to accomplish all of its future strategic plans is dependent upon obtaining additional financing or executing other strategic options, however, there is no assurance that the Company will achieve these objectives.

At December 31, 2010, the Company has met all the obligations associated with its financial liabilities. Approximately 23% of the Company's accounts payable are current, 21% fall within 31 – 90 days and the remaining 56% are over 90 days.

ii) Market Risk

Market risk is the risk that the fair value or future cash flows of financial instruments will fluctuate as a result of changes in market prices and is comprised of the following:

Foreign Exchange Risk

The Company earns certain revenue and incurs certain operating expenses and capital expenditures in U.S. dollars. At December 31, 2010, the Company had U.S. denominated payables of \$261,535 (December 31, 2009 – U.S. \$267,018). Accordingly, fluctuations in the exchange rate between the U.S. and Canadian dollar can have an effect on the Company's reported results.

The Company's foreign exchange gain/loss is primarily comprised of unrealized foreign exchange gains and losses on the translation of the U.S. dollar payables. A \$0.01 change in the U.S. to Canadian dollar exchange rate, at the balance sheet date, would have resulted in a \$2,588 change in foreign exchange gain/loss at December 31, 2010 (December 31, 2009 - \$2,925).

The Company's policy with respect to foreign currency risk management, as approved by the Board of Directors, is to obtain natural hedges of revenue and expenses to the extent possible. The Company does not speculate and remains at risk to the market where natural hedges are not in place.

Interest Rate Risk

Interest rate risk is the risk that the value of a financial instrument will fluctuate as a result of changes in market interest rates. The Company is exposed to interest rate risk as the cash flows generated from its cash and cash equivalents will fluctuate in response to changes in market interest rates. The cash and cash equivalents are comprised of cash and short term deposits with a Canadian Chartered Bank. All of the Company's short-term debt and convertible debenture are at fixed rates.

For the year ended December 31, 2010, an increase or decrease in net earnings for each one percent per annum change in interest rates on cash and cash equivalents amounts to \$2,674 as compared to \$36,875 for the year ended December 31, 2009.

With respect to interest rate risk management, the Company is at risk to the open market for interest rates received on deposits.

iii) Credit Risk

Credit risk is the risk that the counterparty to a financial asset will default, resulting in the Company incurring a financial loss. The Company is exposed to credit risk on its cash and cash equivalents, investment, and accounts receivable, to a maximum of the carrying value of the aforementioned items at the end of the period.

Cash and cash equivalents:

The Company mitigates its exposure to credit risk by maintaining its Canadian domiciled bank accounts with a Canadian Chartered Bank.

Investment:

The investment is at risk to the open market as the Company has not taken any measures to mitigate its exposure to credit risk on this investment.

Accounts receivable:

The Company has policies and procedures in place to govern the credit risk it will assume. A significant portion of the Company's accounts receivable balance at December 31, 2010 is due from a two customers. The first amount (\$100,000) relates to the sale of an asset and the second amount (\$47,250) arose from contract research we performed. The remainder of the balance comprises items of a low risk nature such as amounts owed from customers with whom we have a history of payment, wage subsidies and interest receivable from a Canadian Chartered Bank. Management has reviewed the items comprising the accounts receivable balance and determined that all accounts are collectible; accordingly there has been no allowance for doubtful accounts recorded.

For the year ended December 31, 2010, most of the Company's revenue was mainly earned from two customers. Revenue from the two customers for the year ended December 31, 2010 was \$315,790 and \$151,714. The Company's licensing option fee revenue of \$1,161,495 for the year ended December 31, 2009 all related to a single customer.

PROPOSED TRANSACTIONS

There were no proposed asset or business acquisition or disposition transactions pending as at December 31, 2010.

OTHER MD&A REQUIREMENTS

Outstanding Share Data

We have 51,374,536 common shares outstanding at March 30, 2011. If all of our options, warrants and convertible debentures were exercised, we would have 146,941,959 common shares outstanding.

Disclosure Controls and Procedures & Internal Controls over Financial Reporting

We are responsible for establishing and maintaining disclosure controls and procedures and internal control over financial reporting as defined in NI 52-109.

Our disclosure controls and procedures are designed to provide reasonable assurance for the timely disclosure of all material information. We have evaluated the effectiveness of our disclosure controls and procedures for the year ended December 31, 2010. Based on that evaluation, we have concluded that these controls and procedures provide reasonable assurance that information required to be disclosed in our annual filings, interim filings or other reports that we file or submit under applicable Canadian securities legislation is recorded, processed, summarized and reported within the time periods specified in such legislation. These controls and procedures also provide reasonable assurance that such information is accumulated and communicated to our management, including our Chief Executive and Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Internal controls over financial reporting have been designed to provide reasonable assurance regarding the reliability of our financial reporting and compliance with GAAP. Internal controls over financial reporting have been designed by management based on the framework in "Internal Control – Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") and are adequately designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the financial statements for external purposes in accordance with GAAP. We have put in place procedures to evaluate the operating effectiveness of our internal controls over financial reporting as at December 31, 2010 and have concluded that they provide reasonable assurance regarding the reliability of our financial reporting and compliance with GAAP.

During the period ended December 31, 2010, there have been no changes to the Corporation's internal controls over financial reporting that have materially affected, or are reasonably likely to materially affect, the internal controls over financial reporting.

Because of their inherent limitations, disclosure controls and procedures and internal controls over financial reporting may not prevent or detect misstatements, errors or fraud. Control systems, no matter how well conceived or operated, can provide only reasonable, not absolute, assurance that the objectives of the control systems are met.

DIRECTORS RICHARD SMITH, Chair of the Board, SemBioSys Genetics Inc., Former President & CEO, Dow AgroSciences Canada, Inc.
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IAN BROWN, Independent Consultant
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