

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

**Form 10-K**

**Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

For the fiscal year ended: March 31, 2014

or

**Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

Commission file number: 000-54014

**VISTAGEN THERAPEUTICS, INC.**

(Exact name of registrant as specified in its charter)

Nevada  
(State or other jurisdiction of incorporation or organization)

20-5093315  
(I.R.S. Employer Identification No.)

343 Allerton Avenue  
South San Francisco, California 94080  
(650) 577-3600

(Address, including zip code, and telephone number, including area code, of registrant's principal executive office)

**Securities registered pursuant to Section 12(b) of the Act:**

None

**Securities registered pursuant to Section 12(g) of the Act:**

Common Stock, par value \$0.001 per share

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes  No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes  No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes  No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer  Accelerated filer  Non-accelerated filer  Smaller reporting company   
(Do not check if a smaller reporting company)

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes  No

The aggregate market value of the common stock of the registrant held by non-affiliates of the registrant on September 30, 2013, the last business day of the registrant's second fiscal quarter was: \$9,655,600.

As of June 19, 2014 there were 25,451,877 shares of the registrant's common stock outstanding.

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**Special Note Regarding Forward-Looking Statements**

This Annual Report on Form 10-K includes forward-looking statements. All statements contained in this Annual Report on Form 10-K other than statements of historical fact, including statements regarding our future results of operations and financial position, our business strategy and plans, and our objectives for future operations, are forward-looking statements. The words “believe,” “may,” “estimate,” “continue,” “anticipate,” “intend,” “expect” and similar expressions are intended to identify forward-looking statements. We have based these forward-looking statements largely on our current expectations and projections about future events and trends that we believe may affect our financial condition, results of operations, business strategy, short-term and long-term business operations and objectives, and financial needs. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in the “Risk Factors” section. Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the future events and trends discussed in this Annual Report on Form 10-K may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. The events and circumstances reflected in the forward-looking statements may not be achieved or occur. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. We are under no duty to update any of these forward-looking statements after the date of this Annual Report on Form 10-K or to conform these statements to actual results or revised expectations. If we do update one or more forward-looking statements, no inference should be drawn that we will make additional updates with respect to those or other forward looking statements.

PART I

Item 1. Business

We were first incorporated in California on May 26, 1998. We merged with Excaliber Enterprises, Ltd., a Nevada corporation (Excaliber), a publicly held company, on May 11, 2011, and shortly thereafter changed our name to “VistaGen Therapeutics, Inc.” Unless the context otherwise requires, the words “VistaGen Therapeutics, Inc.,” “VistaGen,” “we,” “the Company,” “us” and “our” refer to VistaGen Therapeutics, Inc., a Nevada corporation. “VistaGen California” refers to VistaGen Therapeutics, Inc., a California corporation and our wholly owned subsidiary.

We are a stem cell company headquartered in South San Francisco, California focused on drug rescue and regenerative medicine. We believe *better cells lead to better medicine*<sup>™</sup> and that the key to making better cells is precisely controlling the differentiation of human pluripotent stem cells, which are the building blocks of all cells of the human body. For over 15 years, our stem cell research, development teams and collaborators have focused on controlling the differentiation of pluripotent stem cells to produce multiple types of mature, functional, adult human cells, with emphasis on human heart and liver cells.

***Our stem cell technology platform - Human Clinical Trials in a Test Tube*<sup>™</sup>**

Our stem cell technology platform, which we refer to as *Human Clinical Trials in a Test Tube*, is based on a combination of proprietary and exclusively licensed technologies for controlling the differentiation of human pluripotent stem cells into multiple types of mature, functional, adult human cells that we use, or plan to develop, to reproduce complex human biology and disease. We are currently producing human heart cells and liver cells for our drug rescue applications. However, we also intend to advance, internally and through collaborative research projects, production of pluripotent stem cell-derived blood, bone, cartilage, and pancreatic beta-islet cells and explore ways to leverage our stem cell technology platform for regenerative medicine purposes. Our interest in the regenerative medicine arena is on developing novel human disease models for discovery of small molecule drugs and biologics that activate the endogenous growth and healing processes enabling the body to repair tissue damage caused by certain degenerative diseases.

***CardioSafe 3D*<sup>™</sup>**

Using mature cardiomyocytes (heart cells) differentiated from human pluripotent stem cells, we have developed *CardioSafe 3D*, as a novel, *in vitro* bioassay system used to assess new drug candidates for potential cardiac toxicity before they are tested in humans. We believe *CardioSafe 3D* is capable of predicting the *in vivo* cardiac effects, both toxic and non-toxic, of small molecule drug candidates with greater speed and precision than the long-established, surrogate safety models most often used in drug development, including models using animal cells or live animals, and cellular assays using cadaver, immortalized or transformed cells. Our pluripotent stem cell derived cardiomyocytes and *CardioSafe 3D* are key components of our *Human Clinical Trials in a Test Tube* platform and drug rescue programs.

***LiverSafe 3D*<sup>™</sup>**

Using mature, functional adult hepatocytes (liver cells) derived from human pluripotent stem cells, we are correlating *LiverSafe 3D*, our second novel stem cell technology-based bioassay system, with reported clinical results. We believe *LiverSafe 3D* will enable us to assess, early in development, new drug candidates for potential drug-induced liver toxicity and particularly metabolism issues that can result in serious adverse drug-drug interactions, before animal or human testing. We plan to use *LiverSafe 3D*, and the clinically predictive liver biology insight we believe it will provide us, to expand the scope of our commercial opportunities related to drug rescue.

***Drug Rescue***

We believe drug rescue, using our novel *in vitro* bioassay systems, *CardioSafe 3D* and *LiverSafe 3D*, the foundation of our *Human Clinical Trials in a Test Tube* platform, is the highest-value near term commercial application of the human cells we produce. Detailed information is available to us in the public domain regarding the efficacy, pharmacology, formulation and toxicity of promising small molecule drug candidates developed by pharmaceutical and biotechnology companies which have failed due to unexpected heart or liver toxicity. These failed but still promising drug candidates, which we refer to as *Drug Rescue Candidates*<sup>™</sup>, have already been optimized and tested by a pharmaceutical or biotechnology company and assessed for efficacy and commercial potential.

Failure of promising *Drug Rescue Candidates* due to unexpected human clinical toxicity highlights the need for new paradigms to evaluate potential heart and liver toxicity early in drug development. While efforts of pharmaceutical and biotechnology companies to improve their prediction of such human clinical toxicity for new drug candidates is ongoing, the existence of *Drug Rescue Candidates*<sup>TM</sup> offers us an opportunity to use our novel stem cell technology to take advantage of prior third-party investment in *Drug Rescue Candidates* with early signs of efficacy, by significantly reducing the toxicity that caused them to be terminated, and bring new, safer versions back into development protected by new intellectual property. We refer to the new, safer versions of *Drug Rescue Candidates* we intend to produce with our medicinal chemistry collaborator and validate internally in our bioassay systems as *Drug Rescue Variants*<sup>TM</sup>.

Through stem cell technology-based drug rescue, our objective is to become a leading source of proprietary, small molecule drug candidates to the global pharmaceutical industry. We have designed our drug rescue model to leverage publicly available information and substantial prior investment by pharmaceutical companies and others in *Drug Rescue Candidates*. The key commercial objective of our drug rescue model is to generate revenue from license, development and commercialization arrangements involving *Drug Rescue Variants*. We anticipate that each validated lead *Drug Rescue Variant* will be suitable as a promising new drug development program, either internally or in collaboration with a strategic partner.

#### **Our Drug Rescue Strategy**

We believe the pre-existing public domain knowledge base supporting the therapeutic and commercial potential of our *Drug Rescue Candidates* will provide us with a valuable head start as we launch our drug rescue programs. Leveraging the substantial prior investments by global pharmaceutical companies and others in discovery, optimization and efficacy validation of *Drug Rescue Candidates* is an essential component of our drug rescue strategy.

Our current drug rescue emphasis is on *Drug Rescue Candidates* discontinued prior to FDA market approval due to unexpected cardiac safety concerns. By using our *CardioSafe* 3D assay platform to enhance our understanding of the cardiac liability profile of *Drug Rescue Candidates*, biological insight not previously available when the *Drug Rescue Candidate* was originally discovered and developed, we believe we can demonstrate *in vitro* proof-of-concept as to the efficacy and safety of *Drug Rescue Variants* earlier in development and with substantially less investment in discovery, efficacy optimization and development than was required of the pharmaceutical companies prior to their decision to terminate the *Drug Rescue Candidates*.

The key elements of our *CardioSafe* 3D drug rescue strategy are as follows:

- identify potential *Drug Rescue Candidates* with heart safety issues utilizing drug discovery and development information available in the public domain through open source, licensed databases, and published patents, as well as through our strategic relationships with our drug rescue and scientific advisors and consultants, including Synterys, Inc. and Cato Research Ltd., our preferred provider of contract medicinal chemistry and contract clinical development and regulatory services, respectively;
- leverage substantial prior research and development investments made by global pharmaceutical companies and others to analyze internally the therapeutic and commercial potential of *Drug Rescue Candidates*, as important criteria for selection of *Drug Rescue Candidates* and potential lead *Drug Rescue Variants*;
- use *CardioSafe* 3D to enhance our understanding of the cardiac liability profile of *Drug Rescue Candidates*, important and more comprehensive biological insights not available when the *Drug Rescue Candidates* were originally discovered and developed by pharmaceutical companies;
- leverage our internal knowledgebase about each *Drug Rescue Candidate*'s specific chemistry to design and produce a portfolio of novel potential lead *Drug Rescue Variants* for each *Drug Rescue Candidate*;
- use *CardioSafe* 3D and pre-existing *in vitro* efficacy models to assess the efficacy and cardiac safety of potential *Drug Rescue Variants* and identify and validate a lead *Drug Rescue Variant*; and
- internally develop validated lead *Drug Rescue Variants* or out-license them to a global pharmaceutical company in revenue-generating agreements providing for the full development, market approval and commercial sale.

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We believe our exclusive focus on *Drug Rescue Candidates* with established therapeutic and commercial potential, and our ability to build on that valuable head start using our expertise in human biology, will help us to generate *Drug Rescue Variants* without incurring certain high costs and risks typically inherent in drug discovery and development. Although we plan to continue to identify *Drug Rescue Candidates* in the public domain, we may also seek to acquire rights to *Drug Rescue Candidates* not available to us in the public domain through in-licensing arrangements with third-parties.

**Strategic Licensing of Drug Rescue Variants**

We believe many pharmaceutical companies are experiencing, and will continue to experience, critical research and development productivity issues, as measured by their lack of, or very low number of, FDA-approved products each year during the past decade. For example, in 2013, the U.S. pharmaceutical industry invested over \$51 billion in research and development and the Center for Drug Evaluation and Research (CDER) of the FDA approved a total of only 39 novel drugs, known as New Molecular Entities (NMEs). In 2013, CDER approved only 27 NMEs, thirteen of which NME approvals (48%) were received by only five pharmaceutical companies, including Bayer (two), GlaxoSmithKline (four), Johnson & Johnson (three), Roche (two) and Takeda (two). Despite remarkable levels of research and development investment by the global pharmaceutical industry as a whole, since 2003, the FDA has only approved an average of approximately 26 NMEs per year. In addition, we believe many pharmaceutical companies with established products that are no longer patent protected are also experiencing substantial market pressure from generic competition.

As a result of research and development productivity issues, diminishing product pipelines and generic competition, we believe there is and will continue to be a critical need among pharmaceutical companies to license or acquire the new, safer *Drug Rescue Variants* we are focused on developing, including companies that originally discovered, developed and ultimately discontinued the *Drug Rescue Candidates* we select for our drug rescue programs.

Once we achieve proof-of-concept (POC) *in vitro* as to the efficacy and safety of a lead *Drug Rescue Variant*, we intend to announce the results of our internal POC studies and, at that time, consider whether we will seek to license that *Drug Rescue Variant* to a pharmaceutical company, including the company that developed the *Drug Rescue Candidate*, or further develop it internally on our own. If we decide to license a lead *Drug Rescue Variant* to a pharmaceutical company, through a form of license arrangement we believe is generally accepted in the pharmaceutical industry, we anticipate that the pharmaceutical company will be responsible for all subsequent development, manufacturing, regulatory approval, marketing and sale of the *Drug Rescue Variant* and that we will receive licensing revenue through payments to us from the license upon signing the license agreement, achievement of development and regulatory milestones, and, if approved and marketed, upon commercial sales.

**Regenerative Medicine and Drug Discovery**

Although we believe the best and most valuable near term commercial application of our stem cell technology platform, *Human Clinical Trials in a Test Tube*, is for small molecule drug rescue, we also believe stem cell technology-based regenerative medicine has the potential to transform healthcare in the U.S. over the next decade by altering the fundamental mechanisms of disease. We are interested in exploring ways to leverage our stem cell technology platform for regenerative medicine purposes, with emphasis on developing novel human disease models for discovery of small molecule drugs with regenerative and therapeutic potential. Our regenerative medicine focus will be based on our expertise in human biology, differentiation of human pluripotent stem cells to develop functional adult human cells and tissues involved in human disease, including blood, bone, cartilage, heart, liver and insulin-producing pancreatic beta-islet cells, and our expertise in formulating customized biological assays with the cells we produce. Among our key objectives will be to explore regenerative medicine opportunities through pilot nonclinical proof-of-concept studies, after which we intend to assess any potential opportunities for further development and commercialization of therapeutically and commercially promising regenerative medicine programs and novel, customized, disease-specific biological assays, either on our own or with strategic partners.

**AV-101 for Neuropathic Pain, Epilepsy and Depression**

With \$8.8 million of grant funding awarded from the U.S. National Institutes of Health, we have successfully completed Phase 1 development of AV-101. AV-101, also known as “L-4-chlorokynurenine” and “4-Cl-KYN”, is an orally-available, non-sedating, small molecule prodrug candidate aimed at the multi-billion dollar neurological disease and disorders market, including neuropathic pain, a serious and chronic condition causing pain after an injury or disease of the peripheral or central nervous system, epilepsy, depression and Parkinson’s disease. Our AV-101 IND application, on file with the FDA, covers clinical development for neuropathic pain. However, we believe the Phase 1 AV-101 safety studies completed to date will support development of AV-101 for multiple indications, including epilepsy, depression and Parkinson’s disease. We intend to seek potential opportunities for further clinical development and commercialization of AV-101 for neuropathic pain, epilepsy, depression and Parkinson’s disease, on our own or with strategic partners. In the event that we successfully complete one or more strategic partnering arrangements for AV-101, we plan to use the net proceeds from such an arrangement(s) to expand our stem cell technology-based drug rescue and regenerative medicine programs.

**Scientific Background**

**Stem Cell Basics**

Stem cells are the building blocks of all cells of the human body. They have the potential to develop into many different mature cell types. Stem cells are defined by a minimum of two key characteristics: (i) their capacity to self-renew, or divide in a way that results in more stem cells; and (ii) their capacity to differentiate, or turn into mature, specialized cells that make up tissues and organs. There are many different types of stem cells that come from different places in the body or are formed at different times throughout our lives, including pluripotent stem cells and adult or tissue-specific stem cells, which are limited to differentiating into the specific cell types of the tissues in which they reside. We focus exclusively on human pluripotent stem cells.

Human pluripotent stem cells (*hPSCs*) can be differentiated into all of the more than 200 types of cells in the human body, expanded readily, and have diverse medical research, drug discovery, drug rescue, drug development and therapeutic applications. We believe hPSCs can be used to develop numerous cell types, tissues and customized biological assays that can mimic complex human biology, including heart and liver biology for drug rescue.

Human pluripotent stem cells are either embryonic stem cells (*hESCs*) or induced pluripotent stem cells (*iPSCs*). Both hESCs and iPSCs have the capacity to be maintained and expanded in an undifferentiated state indefinitely. We believe these features make them highly useful research and development tools and as a source of normal, functionally mature cell populations. We use these mature cells as the basis for formulating our novel, customized bioassay systems to test the safety and efficacy of new drug candidates *in vitro*. These cells also have potential for diverse regenerative medicine applications.

**Human Embryonic Stem Cells**

Human embryonic stem cells are derived from excess embryos that develop from eggs that have been fertilized in an *in vitro* fertilization (*IVF*) clinic and then donated for research purposes with the informed consent of the parental donors after a successful IVF procedure. Human embryonic stem cells are not derived from eggs fertilized in a woman’s body. Human ESCs are isolated when the embryo is approximately 100 cells, well before organs, tissues or nerves have developed.

Human embryonic stem cells have the greatest and most documented potential to both self-renew and differentiate. They undergo increasingly tissue-restrictive developmental decisions during their differentiation. These “fate decisions” commit the hESCs to becoming only a certain type of mature, functional cells and ultimately tissues. At one of the first fate decision points, hESCs differentiate into epiblasts. Although epiblasts cannot self-renew, they can differentiate into the major tissues of the body. This epiblast stage can be used, for example, as the starting population of cells that develop into millions of blood, heart, muscle, liver and insulin-producing pancreatic beta-islet cells, as well as neurons. In the next step, the presence or absence of certain growth factors, together with the differentiation signals resulting from the physical attributes of the cell culture techniques, induce the epiblasts to differentiate into neuroectoderm or mesendoderm cells. Neuroectoderm cells are committed to developing into cells of the skin and nervous systems. Mesendoderm cells are precursor cells that differentiate into mesoderm and endoderm. Mesoderm cells develop into muscle, bone and blood, among other cell types. Endoderm cells develop into the internal organs such as the heart, liver, pancreas and intestines, among other cell types.

### **Induced Pluripotent Stem Cells**

It is also possible to obtain hPSC lines from individuals without the use of embryos. Induced pluripotent stem cells are adult cells, typically human skin or fat cells that have been genetically reprogrammed to behave like hESCs by being forced to express genes necessary for maintaining the pluripotential properties of hESCs. Although researchers are exploring non-viral methods, most early iPSCs were produced by using various viruses to express three or four genes required for the immature pluripotential property similar to hESCs. It is not yet precisely known, however, how each gene actually functions to induce cellular pluripotency, nor whether each of the three or four genes is essential for this reprogramming. Although hESCs and iPSCs are believed to be similar in many respects, including their pluripotential ability to form all cells in the body and to self-renew, scientists do not yet know whether they differ in clinically significant ways or have the same ability to self-renew.

Although there are remaining questions in the field about the lifespan, clinical utility and safety of iPSCs, we believe the biology and differentiation capabilities of hESCs and iPSCs are likely to be comparable for drug rescue purposes. There are, however, specific situations in which we may prefer to use one or the other type of hPSC. For example, we may prefer to use iPSCs for potential drug discovery applications based on the relative ease of generating iPSCs from:

- individuals with specific inheritable diseases and conditions that predispose the individual to respond differently to drugs; or
- individuals with specific variations in genes that directly affect drug levels in the body or alter the manner or efficiency of their metabolism, breakdown and/or elimination of drugs.

Because they can significantly affect the therapeutic and/or toxic effects of drugs, these genetic variations have an impact on drug discovery and development. We believe iPSC technologies may allow the rapid and efficient generation of hPSCs from individuals with specific genetic variations. These hPSCs might then be used to produce cells and formulate novel, customized biological assays to model specific diseases and genetic conditions for drug discovery and drug rescue purposes.

### **Proprietary Stem Cell Differentiation Protocols**

Over fifteen years of research, together with Dr. Gordon Keller, our co-founder and Chairman of our Scientific Advisory Board, we have developed proprietary differentiation protocols covering key conditions involved in the differentiation of hPSCs into multiple types of mature human cells. The human cells generated by following these proprietary differentiation protocols are integral to our *Human Clinical Trials in a Test Tube* platform. We believe they support more clinically-predictive *in vitro* bioassay systems than animal testing or cellular assays currently used in drug discovery and development. Our strategic technology licenses from National Jewish Health in Denver, the Icahn School of Medicine at Mount Sinai in New York and the University Health Network in Toronto (*UHN*) relate to proprietary stem cell differentiation protocols developed by Dr. Keller and involve precisely-coordinated temporal and quantitative conditions and interaction of biological molecules, including:

- specific growth and differentiation factors used in the tissue culture medium, applied in specific combinations, at critical concentrations, and at critical times unique to each desired human cell type;
- the experimentally controlled regulation of developmental genes, which is critical for determining what differentiation path a human cell will take; and
- biological markers characteristic of precursor cells, which are committed to becoming specific human cells and tissues, and which can be used to identify, enrich and purify the desired mature human cell type.

We believe our *Human Clinical Trials in a Test Tube* platform will allow us to assess the toxicity profile of *Drug Rescue Variants* and other new drug candidates for a wide range of diseases and conditions with greater speed and precision than nonclinical surrogate safety models most often currently used in drug development.



#### **Growth Factors that Direct and Stimulate the Differentiation Process**

The proprietary and licensed technologies underlying our *Human Clinical Trials in a Test Tube* platform allow us to direct and stimulate the differentiation process of hPSCs. As an example, for hESCs, the epiblast is the first stage in differentiation. One biological factor that controls the first fate decision of the epiblast is the relative concentrations of serum growth factors and activin, a protein involved in early differentiation and many cell fate decisions. Substituting explicit amounts of defined growth factors in place of ill-defined animal serum, and adding the optimal amount of activin is an important step in inducing the reproducible development of functional cells and, in our view, is essential for the development of a robust, efficient, and reproducible model of human cellular differentiation suitable for drug rescue. The use of activin in these applications is core to many of the claims in the patent applications underlying our licensed hPSC technology. Replacing activin with continuous exposure to ill-defined and variable animal serum results in an inefficient and variable differentiation of the human heart, liver, blood and cells of other organs. See “Intellectual Property – Icahn School of Medicine at Mount Sinai Exclusive Licenses.”

In addition to activin, Dr. Keller’s studies have identified a number of other growth and developmental factors that play important roles in the differentiation of hESCs. Some of the patents and patent applications underlying our licensed hPSC technology are directed to the use of a variety of specific growth factors that increase the efficiency (yield) and reproducibility of the hPSC differentiation process. We have exclusive rights to certain patents and patent applications with claims relating to growth factor concentrations for hESC differentiation that we believe are core and essential for drug rescue and development. See “Intellectual Property – Icahn School of Medicine at Mount Sinai Exclusive Licenses” and “National Jewish Health Exclusive Licenses.”

#### **Developmental Genes That Direct and Stimulate the Stem Cell Differentiation Process**

For the purpose of creating our *Human Clinical Trials in a Test Tube* platform, we further control the differentiation process by controlling regulation of key developmental genes. By studying natural organ and tissue development, researchers have identified many genes that are critical to the normal differentiation, growth and functioning of tissues of the body. We engineer hESCs in a way that enables us to regulate genes that have been identified as critical to control and direct the normal development of specific types of cells. We can then mimic human biology in a way that allows us to turn on and off the expression of a selected gene by the addition of a specific compound to a culture medium. By adding specific compounds, we have the ability to influence the expression of key genes that are critically important to the normal biology of the cell.

#### **Cell Purification Approaches**

The proprietary protocols we have licensed and developed for our *Human Clinical Trials in a Test Tube* platform also establish specific marker genes and proteins which can be used to identify, enrich, purify, and study important populations of intermediate precursor cells that have made specific fate decisions and are on a specific developmental pathway towards a certain type of functionally mature cell. These proprietary protocols enable a significant increase in the efficiency, reproducibility, and purity of final cell populations. For example, we are able to isolate millions of purified specific precursor cells which, together with a specific combination of growth factors, develop full culture wells of functional, beating human cardiomyocytes. Due to their functionality and purity, we believe these cell cultures are ideal for drug rescue.

#### **3D “Micro-Organ” Culture Systems**

In addition to standard two-dimensional (2D) cultures which work well for some cell types and cellular assays, the proprietary hPSC technologies underlying our *Human Clinical Trials in a Test Tube* platform enable us to grow large numbers of normal, non-transformed, human cells to produce novel *in vitro* 3D “micro-organ” culture systems. For example, for *CardioSafe* 3D, we grow large numbers of normal, non-transformed, mature human heart cells *in vitro* in 3D micro-organ culture systems. The 3D micro-organ cultures induce the cells to grow, mature, and develop 3D cell networks and tissue structures. We believe these 3D cell networks and structures more accurately reflect the structures and biology inside the human body than traditional flat, 2D, single cell layers grown on plastic, that are widely used by pharmaceutical companies today. We believe that the more representative human biology afforded by the 3D system will yield responses to drug candidates that are more predictive of human drug responses.

## Medicinal Chemistry

Medicinal chemistry involves designing, synthesizing, or modifying a small molecule compound or drug suitable for clinical development. It is a highly interdisciplinary science combining organic chemistry, biochemistry, physical chemistry, computational chemistry, pharmacology, and statistics. The combination of medicinal chemistry with the proprietary and licensed hPSC technologies underlying our *Human Clinical Trials in a Test Tube* platform are core components of our drug rescue business model. Working with our strategic contract medicinal chemistry partner, Synterys, Inc., we are focused on using our stem cell biology to generate a pipeline of effective and safe *Drug Rescue Variants* of once-promising company drug candidates in a more efficient and cost-effective manner than the processes currently used for drug development.

### CardioSafe 3D

The limitations of current preclinical drug testing systems used by pharmaceutical companies contribute to the high failure rate of drug candidates. Unexpected cardiotoxicity is one of the top two major safety-related reasons for failure of both drugs and drug candidates. Incorporating human pluripotent stem cell-derived cardiomyocyte (hPSC-CM) assays early in preclinical development offers the potential to improve clinical predictability, decrease rescue and development costs, and avoid adverse patient effects, late-stage clinical termination, and product recall from the market.

With our proprietary human pluripotent stem cell technology, we can generate fully-functional hPSC-CMs at a high level of purity (>95%), without genetic modification or antibiotic selection. This is important because genetic modification and antibiotic selection can distort the ratios of cardiac cell types and have a direct impact on the ultimate results and clinical predictivity of the assay. In addition to expressing all of the key ion channels of the human heart (calcium, potassium and sodium) and various cardiomyocytic markers of the human heart, our hPSC-CMs function reliably in all cardiac toxicity assays relevant to cardiac drug effects developed and tested to date.

Utilizing fully functional hPSC-CMs that underlie our *Human Clinical Trials in a Test Tube* platform, we have validated our *CardioSafe 3D* assay system to screen for both cardiomyopathy (or direct cardiomyocyte cytotoxicity) and arrhythmogenesis (or development of irregular beating patterns). We believe *CardioSafe 3D* is sensitive, stable, reproducible and capable of generating data enabling a more accurate prediction of the *in vivo* cardiac effects of *Drug Rescue Variants* and other new drug candidates than is possible with existing preclinical testing systems.

We have developed and validated two functional components of our *CardioSafe 3D* screening system to assess multiple different categories of cardiac toxicities. The first consists of a suite of five fluorescence or luminescence based high-throughput hPSC-CM assays. These five *CardioSafe 3D* assays measure drug-induced cardiomyopathy, including the following:

1. cell viability;
2. apoptosis;
3. mitochondrial membrane depolarization;
4. oxidative stress; and
5. energy metabolism disruption.

These five *CardioSafe 3D* biological assays were correlated to reported clinical results of reference compounds known to be cardiotoxic in humans versus compounds known to be safe in humans. These reference compounds were representative of eight different drug classes, including:

1. Ion channel blockers: amiodarone, nifedipine;
2. hERG trafficking blockers: pentamidine, amoxapine;
3.  $\alpha$ -1 adrenoceptors: doxazosin;
4. Protein and DNA synthesis inhibitors: emetine;
5. DNA intercalating agents: doxorubicin;
6. Antibiotics: ampicillin, cefazolin;
7. NSAID: aspirin; and
8. Kinase inhibitors: staurosporine

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This suite of five *CardioSafe* 3D assays provided measurement of cardiac drug effects with high sensitivity that are consistent with the expected cardiac responses to each of these compounds. Based on our results, we believe our *CardioSafe* 3D assays provide valuable and more comprehensive bio-analytical tools for both assessing the effects of pharmaceutical compounds on cardiac cytotoxicity and for elucidating the specific mechanisms of cardiac toxicity, thereby laying a solid foundation for our drug rescue programs.

The other component of our *CardioSafe* 3D assay system is a sensitive and reliable medium throughput multi-electrode array (MEA) assay developed to predict drug-induced alterations of electrophysiological function of the human heart. We have validated (correlated with reported clinical results) this key component of our *CardioSafe* 3D assay system with twelve drugs, each with known toxic or non-toxic cardiac effects in humans. These twelve validation compounds are as follows:

1. One FDA-approved drug (aspirin) without cardiac liability to serve as a negative control;
2. Five FDA-approved drugs (astemizole, sotalol, cisapride, terfenadine and sertindole) that were withdrawn from the market due to heart toxicity concerns;
3. Five FDA-approved drugs (fexofenadine, nifedipine, verapamil, lidocaine and propranolol) that have certain measurable clinical non-toxic cardiac effects. Note: fexofenadine is a non-cardiotoxic drug variant of terfenadine; and
4. One research compound (E-4031) failed in Phase I human clinical study before being discontinued due to heart toxicity concerns.

We have validated that our *CardioSafe* 3D MEA assay was reproducible and consistent with the known human cardiac effects of all the twelve compounds studied, based on the mechanisms of action and dosage of the compounds. For instance, by using *CardioSafe* 3D, we were able to distinguish between the cardiac effects of terfenadine (Seldane™), withdrawn by the FDA due to cardiotoxicity, and the cardiac effects of the close structurally related fexofenadine (Allegra™), the non-cardiotoxic chemical variant of terfenadine, which remains on the market. Our validation data suggest that our *CardioSafe* 3D assay system provides valuable and more comprehensive bio-analytical tools for preclinical cardiac safety screening of drug candidates, which we believe will contribute to the efficient identification of novel, safer *Drug Rescue Variants* in our drug rescue programs.

To further evaluate the potential of our *CardioSafe* 3D assay system to predict cardiac toxicity of drug candidates, including *Drug Rescue Variants*, we have assessed cardiac effects induced by small molecule kinase inhibitors (KIs), which belong to a new category of drugs that have revolutionized cancer therapy due to decreased systemic toxicity and an increased tumor cell specific effect compared to classic cancer drugs. Since 1998, the FDA has approved approximately thirty small molecule KIs for cancer therapy. However, many KIs have been implicated in causing serious adverse cardiac events in patients which were not identified during preclinical drug development.

In our *CardioSafe* 3D validation studies, *CardioSafe* 3D detected cardiac toxicities of well-known anti-cancer KIs, all of which were cardiac toxicities not previously identified during the pre-FDA approval development process for each compound studied. This important validation set of compounds is as follows:

1. Inhibitors to growth factor receptors: sunitinib, axitinib, imatinib, dasatinib, sorafenib, erlotinib, Lapatinib, tyrphostin and AG1478;
2. Inhibitors to the mTOR pathway: everolimus, temsirolimus;
3. Inhibitors to cell cycle regulators: tozasertib, barasertib, alvocidib;
4. Inhibitors to the PI3K pathway : perifosine, LY294002, XL765;
5. Inhibitors to the MEK pathway: PD325901, AZD6264; and
6. Inhibitors to the JAK and other pathways: lestaurtinib.

Our validation data indicate that *CardioSafe* 3D successfully detected cardiotoxicity induced by all of the representative compounds, concordant with now-reported adverse cardiac events from each of the different KI categories. Our *CardioSafe* 3D assay system is able to distinguish between cardiotoxic and safe compounds, and even between those which inhibit the same kinase pathways. For instance, both sunitinib and axitinib are the inhibitors to VEGFR, PDGFR and c-Kit pathways, and our *CardioSafe* 3D assays indicate that sunitinib is cardiotoxic and axitinib is safe, outcomes which are consistent with the reported clinical outcomes.

Furthermore, the cardiotoxicity profile of each KI studied provided clues as to the potential mechanism(s) causing the cardiac cytotoxicity of each compound. For example, cardiac cytotoxicity induced by perifosine showed apoptotic responses at lower concentrations, while imatinib was most active in the oxidative stress assays. In addition, no cardiac toxicity or alteration in electrophysiology was detected with drugs that do not have a cardiac liability, emphasizing the specificity of our *CardioSafe* 3D assay system. Having information on the pathways associated with the toxic effects of compounds provides important clues for novel medicinal chemistry approaches and compound modifications for our *CardioSafe* 3D drug rescue programs.

Our *CardioSafe* 3D assay system enables the sensitive measurement of drug effects with results that are consistent with reported clinical responses to the compounds. For example, our data indicated that sunitinib and dasatinib caused QT prolongation, arrhythmia, and/or altered contraction rates in hPSC-CMs, which are consistent with clinical observations.

We believe our *CardioSafe* 3D validation data demonstrate that *CardioSafe* 3D will improve clinical predictivity as an *in vitro* preclinical cardiac safety assay, helping not only to identify potential cardiac toxicities, but also to discover important potential mechanisms of cardiotoxicity. We believe the results of our *CardioSafe* 3D validation studies indicate that *CardioSafe* 3D may be effectively used to identify novel, *Drug Rescue Variants*, with reduced heart toxicity. By providing more accurate, comprehensive and timely indications of alterations in electrophysiological activity as well as direct heart toxicity of drug candidates than animal models or cellular assay systems currently used by pharmaceutical companies, we believe the results of our *CardioSafe* 3D validation studies support the central premise of our drug rescue business model: by using our hPSC-derived human heart and liver cell bioassay systems at the front end of the drug development process, we have the opportunity to leverage substantial prior investment by pharmaceutical companies and others in drug discovery and efficacy optimization of once-promising drug candidates that have been terminated prior to FDA approval due to unexpected heart or liver toxicity concerns.

#### ***LiverSafe* 3D**

*LiverSafe* 3D is a powerful new *in vitro* hepatotoxicity assay system that goes a step beyond the current commercially available gold standard primary (human cadaver) hepatocyte assays. By combining the flexibility of an *in vitro*, non-transformed human cell-based assay system with the renewable, reproducible sourcing of human pluripotent stem cells (*hPSCs*), the functional hPSC-derived hepatocytes we produce for *LiverSafe* 3D can be maintained in a healthy state for much longer than the current gold standard hepatocyte assays, greatly enhancing the reliability of hepatotoxicity testing for our drug rescue programs.

Until now, reliable human cell-based hepatotoxicity screening platforms have been difficult to establish for high throughput drug development with currently available primary hepatocyte systems. Primary hepatocytes have a short lifespan in culture, during which time they rapidly lose their drug metabolizing capabilities and develop signs of cellular stress. Furthermore, these commercially available primary hepatocytes have significant batch-to-batch genetic variation that alters the function of drug metabolism genes and their critical enzyme activity levels due to the use of hepatocytes from different sources. Additionally, primary hepatocytes are derived from individuals with significant differences in health status, with unknown effects on hepatocyte function. Consequently, it is difficult to maintain quantitative reproducibility using currently available primary hepatocyte assays, and this leads to limitations in the quality and clinical predictivity of the results and conclusions drawn from these assays.

The foregoing limitations have led many in the field to believe that hPSC-derived hepatocyte assays offer a better alternative to the current gold standard primary hepatocyte assays. This belief is mainly due to the fact that hepatocytes derived from the same hPSC line are genetically identical, normal, non-transformed (that is, not tumor-derived) human cells derived from hPSCs. Importantly, hPSC-derived hepatocytes can be indefinitely propagated and frozen down into large, uniform, quality-controlled cell banks. The challenge to using hPSC-derived hepatocytes has been differentiating the stem cells into mature hepatocytes that express a full complement of functional drug metabolizing enzymes, nuclear receptors, and transporters at least as well as primary hepatocytes. While many groups have taken on this challenge in recent years, published reports indicate that current hPSC differentiation protocols yield immature hepatocytes, especially with respect to extremely low expression of certain key drug metabolizing enzymes, such as *CYP3A4*. *CYP3A4* is a critical liver enzyme responsible for metabolizing approximately 50% of the FDA-approved drugs currently available on the market. It is an important and well-accepted functional gene found almost exclusively in mature, adult hepatocytes. *CYP3A4* is the key functional marker that we have used to optimize our hepatocyte differentiation cultures for *LiverSafe* 3D. We believe our optimized *LiverSafe* 3D assay system enables us to generate more mature hPSC-derived hepatocytes than are currently available from others in the field and that our *LiverSafe* 3D system provides the unique ability to specifically select for mature *CYP3A4*-expressing human hepatocytes.

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We developed *LiverSafe* 3D using hPSC differentiation protocols adapted from the laboratory of our co-founder, Dr. Gordon Keller, and our proprietary hPSC cell line, 3A4BLA. This 3A4BLA cell line is a human embryonic stem cell (*hESC*) line that contains a humanized BLA functional “reporter” that targets the *CYP3A4* gene in a manner resulting in the expression of BLA only in cells that also express *CYP3A4*. This allows us to visualize by fluorescence cells that express *CYP3A4* based on expression of the BLA reporter. By producing a cell line capable of tracking *CYP3A4* expression, we have been able to optimize our hPSC differentiation protocols to increase expression of mature hepatocyte markers and drug metabolizing enzymes and to enrich for *CYP3A4*-expressing cells by cell sorting. However, even in the absence of cell sorting, our *LiverSafe* 3D hepatocyte populations contain greater than 80% ALBUMIN-positive cells and greater than 40% *CYP3A4*-positive cells, with *CYP3A4* mRNA expression reaching levels nearly 60-fold higher than side-by-side 38-week human fetal liver controls. Our *LiverSafe* 3D hepatocytes secrete urea and ALBUMIN at levels that exceed commercially-available primary hepatocytes, and they also store both glycogen and lipids, characteristics that are required of functional, mature adult hepatocytes. Importantly, expression of fetal liver markers decreases over the time course of differentiation of our *LiverSafe* 3D hepatocytes. This decreased expression is expected and essential during maturation of hepatocytes, but it has rarely been reported by others in publications describing their hPSC-derived hepatocytes. With the addition of cell sorting, our *LiverSafe* 3D hepatocyte populations can be highly enriched for *CYP3A4*-BLA-positive cells, with *CYP3A4* message in the positive cell population reaching greater than 30% that of an adult human liver pool control. To our knowledge, this level of *CYP3A4* expression exceeds levels reported by others in the literature.

The most important capabilities of *LiverSafe* 3D relate to “Phase I” and “Phase II” drug metabolism, which are functional characteristics of mature adult hepatocytes. We have validated these capabilities of *LiverSafe* 3D by demonstrating its ability to metabolize known substrates, such as testosterone, and its ability to respond properly to known inducers of Phase I-mediated *CYP3A4* metabolism, such as rifampicin. Moreover, our *LiverSafe* 3D hepatocytes demonstrate Phase II-mediated testosterone metabolism levels that exceed commercially available primary hepatocytes. These functional characteristics of mature adult hepatocytes are critical to the development of a reliable and clinically predictive hepatotoxicity screening platform for our drug rescue programs. We are currently focused on expanding our panel of validation assays and compounds to include more P450 substrates, inducers, and inhibitors, as well as adapting the cellular toxicity assays that have been developed for our *CardioSafe* 3D assay system to our *LiverSafe* 3D assay system and to apply specific hepatotoxic screening assays, such as ALBUMIN and urea secretion assays.

We believe *LiverSafe* 3D is a powerful, genetically identical, renewable, and reproducible hepatotoxicity assay system for drug rescue and development that provides great advantages over currently available primary hepatocyte assays. We have demonstrated that our *LiverSafe* 3D hepatocyte populations, even in the absence of cell sorting, secrete adult hepatocyte levels of ALBUMIN and urea and contain greater than 40% *CYP3A4*-positive cells, historically difficult to achieve in hPSC differentiation cultures. The proprietary 3A4BLA cell line component of *LiverSafe* 3D allows us the unique opportunity to enrich *CYP3A4*-positive cells, resulting in *CYP3A4* expression reaching greater than 30% of an adult human liver pool, and to the best of our knowledge, a level higher than described in current literature. Most importantly for drug rescue and development purposes, our hPSC-derived hepatocytes for *LiverSafe* 3D metabolize known substrates and respond to known inducers in a manner expected only of mature adult hepatocytes, paving the way for our final validation of *LiverSafe* 3D system as a novel hepatotoxicity assay system that can improve clinical predictivity, decrease the cost of drug rescue and development, reduce use of live animal studies, and improve drug safety.

### **AV-101**

We have successfully completed Phase I development of AV-101, also known as “L-4-chlorokynurenine” or “4-Cl-KYN”. AV-101 is a prodrug candidate for the treatment of neuropathic pain, epilepsy and depression. Our AV-101 IND application, on file with the FDA, covers our Phase I clinical development for neuropathic pain. However, we believe the safety studies done in Phase I development of AV-101 will support development of AV-101 for other indications, including epilepsy, depression and potentially other neurological diseases, such as Parkinson’s disease.

The NIH awarded us \$8.8 million of grant funding for our preclinical and Phase I clinical development of AV-101. During 2014, we plan to seek strategic partnering arrangements for further development and commercialization of AV-101 for neuropathic pain, epilepsy, depression and potentially neurodegenerative diseases related to aging.

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AV-101 is an orally-available, non-sedating, pro-drug that is converted in the brain into an active metabolite, 7-chlorokynurenic acid (7-Cl-KYNA), which regulates the N-methyl-D-aspartate (NMDA) receptors. 7-Cl-KYNA is a synthetic analogue of kynurenic acid, a naturally occurring neural regulatory compound, and is one of the most potent and selective blockers of the regulatory GlyB-site of the NMDA receptor. In preclinical studies, AV-101 has very good oral bioavailability, is rapidly and efficiently transported across the blood-brain barrier, and is converted into 7-Cl-KYNA in the brain and spinal cord, preferentially, at the site of seizures and potential neural damage.

The effect of AV-101 on chronic neuropathic pain due to inflammation and nerve damage was assessed in rats by using the Chung nerve ligation model. AV-101 effects were compared to either saline and MK-801, or gabapentin (Neurontin™) as positive controls. Similar to the therapeutic effects seen in the acute formalin and thermal pain models, AV-101 had a positive effect on chronic neuropathic pain in the Chung model that were greater than two standard deviations of the control, with no adverse behavioral observations. As expected, MK-801 and gabapentin also demonstrated reduced pain readouts in the Chung model. The effects observed by AV-101 in both the acute and chronic neuropathic pain model systems was dose dependent, and was not associated with any side effects at the range of doses administered. Preclinical AV-101 data demonstrated the potential clinical utility of AV-101 as an analgesic.

**Strategic Transactions and Relationships**

Strategic collaborations are a cornerstone of our corporate development strategy. We believe that our strategic outsourcing and sponsorship of application-focused research gives us flexible access to medicinal chemistry, hPSC research and development, manufacturing, clinical development and regulatory expertise at a lower overall cost than developing and maintaining such expertise internally. In particular, we collaborate with the types of third parties identified below for the following functions:

- academic research institutions, such as Duke University and UHN, for hPSC technology research and development;
- contract medicinal chemistry companies, such as Synterys, Inc., to analyze *Drug Rescue Candidates* and design, produce and analyze *Drug Rescue Variants*; and
- contract clinical development and regulatory organizations (CROs), such as Cato Research, Ltd., for regulatory expertise and clinical development support.

**McEwen Centre for Regenerative Medicine, University Health Network**

The University Health Network (UHN) in Ontario, Canada is a major landmark in Canada's healthcare system. UHN is one of the world's largest research hospitals, with major research in transplantation, cardiology, neurosciences, oncology, surgical innovation, infectious diseases and genomic medicine. Providing care to the community for more than two centuries, UHN brings together the talent and resources needed to achieve global impact and provide exemplary patient care, research and education.

The McEwen Centre for Regenerative Medicine (*McEwen Centre*) is a world-renowned center for stem cell biology and regenerative medicine and a world-class stem cell research facility affiliated with UHN. Dr. Gordon Keller, our co-founder and Chairman of our Scientific Advisory Board, is Director of the McEwen Centre. Dr. Keller's lab is one of the world leaders in successfully applying principles from the study of developmental biology of many animal systems to the differentiation of pluripotent stem cell systems, resulting in reproducible, high-yield production of human heart, liver, blood and vascular cells. The results and procedures developed in Dr. Keller's lab are often quoted and used by academic scientists worldwide.

In September 2007, we entered into a long-term sponsored stem cell research and development collaboration with UHN. In December 2010, we extended the collaboration to September 2017. The primary goal of this ten-year collaboration is to leverage the stem cell research, technology and expertise of Dr. Gordon Keller to develop and commercialize industry-leading human pluripotent stem cell differentiation technology and bioassay systems for drug rescue and development and regenerative cell therapy applications. This sponsored research collaboration builds on our existing strategic licenses from National Jewish Health and the Icahn School of Medicine at Mount Sinai to certain pluripotent stem cell technologies developed by Dr. Keller, and is directed to diverse human pluripotent stem cell-based research projects, including, as expanded and amended, strategic projects related to drug rescue and regenerative medicine. See "Sponsored Research Collaborations and Intellectual Property Rights – University Health Network, McEwen Centre for Regenerative Medicine, Toronto, Ontario", "Intellectual Property – National Jewish Health Exclusive Licenses" and "Intellectual Property – Icahn School of Medicine at Mount Sinai Exclusive Licenses."

**Cardiac Safety Research Consortium**

We have joined the Cardiac Safety Research Consortium ( *CERC* ) as an Associate Member. The CSRC, which is sponsored in part by the FDA, was launched in 2006 through an FDA Critical Path Initiative Memorandum of Understanding with Duke University to support research into the evaluation of cardiac safety of medical products. CSRC supports research by engaging stakeholders from industry, academia, and government to share data and expertise regarding several areas of cardiac safety evaluation, including novel stem cell-based approaches, from preclinical through post-market periods.

**Cardiac Safety Technical Committee of the Health and Environmental Sciences Institute – FDA’s CIPA Initiative**

We have also joined the Cardiac Safety Technical Committee, Cardiac Stem Cell Working Group, and Proarrhythmia Working Group of the Health and Environmental Sciences Institute ( *HESI* ) to help advance, among other goals, the FDA’s Comprehensive In Vitro Proarrhythmia Assay ( *CIPA* ) initiative, which is focused on developing innovative preclinical systems for cardiac safety assessment during drug development. HESI is a global branch of the International Life Sciences Institute ( *ILSI* ), whose members include most of the world’s largest pharmaceutical and biotechnology companies.

The goal of the FDA’s CIPA initiative is to develop a new paradigm for cardiac safety evaluation of new drugs that provides a more comprehensive assessment of proarrhythmic potential by (i) evaluating effects of multiple cardiac ionic currents beyond hERG and ICH S7B (inward and outward currents), (ii) providing more complete, accurate assessment of proarrhythmic effects on human cardiac electrophysiology, and (iii) focusing on Torsades de Pointes proarrhythmia rather than surrogate QT prolongation alone.

**Centre for Commercialization of Regenerative Medicine**

The Toronto-based Centre for Commercialization of Regenerative Medicine ( *CCRM* ) is a not-for-profit, public-private consortium funded by the Government of Canada, six Ontario-based institutional partners and more than 20 companies representing the key sectors of the regenerative medicine industry. CCRM supports the development of foundational technologies that accelerate the commercialization of stem cell- and biomaterials-based products and therapies.

In December 2012, we formalized our membership in the CCRM’s Industry Consortium. Other members of CCRM’s Industry Consortium include such leading global companies as Pfizer, GE Healthcare and Lonza. The industry leaders that comprise the CCRM consortium benefit from proprietary access to certain licensing opportunities, academic rates on fee-for-service contracts at CCRM and opportunities to participate in large collaborative projects, among other advantages. Our CCRM membership reflects our strong association with CCRM and its core programs and objectives, both directly and through our strategic relationships with Dr. Gordon Keller and UHN. We believe our long-term sponsored research agreement with Dr. Keller, UHN and UHN’s McEwen Centre for Regenerative Medicine offers a solid foundation and unique opportunities for expanding the commercial applications of our *Human Clinical Trials in a Test Tube* platform by building multi-party collaborations with CCRM and members of its Industry Consortium. We believe these collaborations have the potential to transform medicine and accelerate significant advances in human health and wellness that stem cell technologies and regenerative medicine promise.

**Duke University**

In November 2011, we entered into a strategic collaboration with Duke University, one of the premier academic research institutions in the U.S., aimed at combining our complementary expertise in cardiac stem cell technology, electrophysiology and tissue engineering. The initial goal of the collaboration is to explore the potential development of novel, engineered, stem cell-derived cardiac tissues to expand the scope of our drug rescue capabilities focused on heart toxicity. We expect that this collaboration, employing our human stem cell-derived heart cells combined with Duke’s technology relating to cardiac electrophysiology and cardiac tissue engineering, will permit us to use micro-patterned cardiac tissue to expand the approaches available to us in our drug rescue programs to quantify drug effects on functional human cardiac tissue.

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In May 2013, we announced that our scientists together with researchers at Duke University combined our human stem cell-derived heart cells with Duke's innovative tissue engineering and cardiac electrophysiology technologies to grow what is being called a "heart patch," which mimics the natural functions of native human heart tissue. We believe this is the closest man-made approximation of natural human heart muscle to date. This heart patch technology is being developed to aid in a better understanding of the biology critical to cardiac tissue engineering, for applications in regenerative cell therapy for heart disease, and as predictive *in vitro* assays for drug rescue and development. We believe the developed contractile forces and other functional properties of these cardiac tissues are remarkable and are significantly higher than any previous reports. The achievement of successfully growing a human heart muscle from cardiomyocytes derived from human pluripotent stem cells expands the scope of our drug rescue capabilities and reflects the advanced nature and potential of our collaboration with Duke University.

Achieving this capability represents a potentially significant breakthrough in heart cell-based therapies and in testing new medicines for potential heart toxicity and potential therapeutic benefits impacting heart disease.

The following are among several key development points from the study:

- The optimized 3D environment of a cardiac tissue patch yields advanced levels of structural and functional maturation of human cardiomyocytes that produce expected responses to drugs;
- Human cardiomyocyte maturation in an optimized 3D patch environment is enhanced relative to that found in industry standard 2D cultures;
- No genetic modifications were used to produce, purify, or mature cardiomyocytes, suggesting potential for future therapeutic applications;
- Cardiac tissue patches generated using VistaGen's cardiomyocytes exhibited 2.2-180 fold higher contractile force generation compared to previous studies;
- Based on a force per cardiomyocyte metric, cardiac tissue engineering methodology that used VistaGen's cardiomyocytes exhibited 4-700-fold higher efficiency than previously reported; and
- Cardiac tissue patches generated using VistaGen's cardiomyocytes exhibited velocities of electrical signal propagation 5-fold higher compared to previous reports in human engineered cardiac tissues.

**Cato Research and Cato BioVentures**

*Cato Research*

Cato Research is a contract research and development organization (CRO), with international resources dedicated to helping biotechnology and pharmaceutical companies navigate the regulatory approval process in order to bring new biologics, drugs and medical devices to markets throughout the world. Cato Research has in-house capabilities to assist its sponsors with aspects of the drug development process including regulatory strategy, nonclinical and toxicology development, clinical development, data processing, data management, statistical analysis, regulatory applications, including INDs and NDAs, chemistry, manufacturing, and control programs, cGCP, cGLP and cGMP audit and compliance activities, and due diligence review of emerging technologies. Cato Research's senior management team, including co-founders Allen Cato, M.D., Ph.D. and Lynda Sutton, has over 25 years of experience interacting with the FDA and international regulatory agencies and a successful track record of product approvals. Should we elect to advance development of *Drug Rescue Variants* internally rather than license or sell them at an early-stage to pharmaceutical companies or others, we believe our long term strategic relationship with Cato Research provides us with real time access to the global connections, insight and knowledge necessary to effectively plan, execute and manage successful nonclinical and clinical development programs throughout the world without incurring the substantial expenses typically associated with establishing and maintaining a wide range of drug development capabilities in-house.

*Cato BioVentures*

Cato Holding Company, doing business as Cato BioVentures (*Cato BioVentures*), is the venture capital affiliate of Cato Research. Through strategic CRO service agreements with Cato Research, Cato BioVentures invests in therapeutics and medical devices, as well as platform technologies such as our stem cell technology-based *Human Clinical Trials in a Test Tube* platform, which its principals believe, based on their experience as management of Cato Research, are capable of transforming the traditional drug development process and the research and development productivity of the biotechnology and pharmaceutical industries.



*Our Relationship with Cato Research and Cato BioVentures*

Cato Research is our primary CRO for development of AV-101. Cato BioVentures is among our largest, long-term institutional investors.

As a result of the access Cato Research has to potential *Drug Rescue Candidates* from its biotechnology and pharmaceutical industry network, as well as Cato BioVentures' strategic long term equity interest in VistaGen, we believe that our relationships with Cato BioVentures and Cato Research may provide us with unique opportunities relating to our drug rescue efforts that will permit us to leverage both their industry connections and the CRO resources of Cato Research, either on a contract research basis or in exchange for economic participation rights, should we develop *Drug Rescue Variants* internally on our own rather than out-license them to strategic partners.

**United States National Institutes of Health**

Since our inception in 1998, the U.S. National Institutes of Health (*NIH*) has awarded us \$11.3 million in non-dilutive research and development grants, including \$2.3 million to support research and development of our *Human Clinical Trials in a Test Tube* platform and \$8.8 million for nonclinical and Phase 1 clinical development of AV-101, our small molecule drug candidate which has successfully completed Phase 1 clinical development in the U.S. for neuropathic pain and other potential diseases and conditions, including epilepsy and depression.

**California Institute for Regenerative Medicine**

The California Institute for Regenerative Medicine (*CIRM*) funds stem cell research at academic research institutions and companies throughout California. CIRM was established in 2004 with the passage of Stem Cell Initiative (Proposition 71) by California voters. As a stem cell company based in California since 1998, we are eligible to apply for and receive grant funding under the Stem Cell Initiative. To date we have been awarded approximately \$1.0 million of non-dilutive grant funding from CIRM for stem cell research and development related to stem cell-derived human liver cells. This funded research and development focused on the improvement of techniques and the production of engineered human ES Cell lines used to develop mature functional human liver cells as a biological system for testing drugs.

**Celsis In Vitro Technologies**

In March 2013, we entered into a strategic collaboration with Celsis In Vitro Technologies (*Celsis IVT*), a premier global provider of specialized in vitro products for drug metabolism, drug-drug interaction and toxicity screening, focused on characterizing and functionally benchmarking our human liver cell platform, *LiverSafe 3D*<sup>TM</sup> with Celsis IVT products for studying and predicting drug metabolism. We intend to utilize Celsis IVT's experience and expertise in *in vitro* drug metabolism to help validate *LiverSafe 3D*<sup>TM</sup>. We anticipate that Celsis IVT will not only validate our human liver cells in traditional pharmaceutical metabolism assays, but also will determine genetic variations in our human pluripotent stem cell lines that are important to drug development. In addition, we plan to utilize Celsis IVT's large inventory of cryopreserved primary human liver cells, currently used throughout the pharmaceutical industry for traditional and high-throughput liver toxicology and other bioassays, as reference controls with which to monitor and benchmark the functional properties of *LiverSafe 3D*.

Collaborating with Celsis IVT scientists, we are focused on the following four key objectives:

- Optimize techniques to handle and maintain primary human cryopreserved primary liver cells as reference controls for various drug development assays;
- Develop a stable supply of characterized and validated human cryopreserved primary liver cells to serve as internal controls and provide benchmark comparisons for the characterization of our pluripotent stem cell-derived liver cells;
- Characterize our human pluripotent stem cell-derived liver cells using many of the same industry-standardized assays used to characterize primary human liver cells; and
- Produce a joint publication of the characterization of our pluripotent stem cell-derived human liver cells.

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As an industry leader in the development of *in vitro* primary hepatocyte technology, we believe Celsis IVT has extensive resources to aid us in the benchmarking *LiverSafe* 3D to industry standards. We anticipate this collaboration will lead to the further validation of *LiverSafe* 3D for predicting liver toxicity and drug metabolism issues before costly human clinical trials.

**Synteris, Inc.**

In December 2011, we entered into a strategic medicinal chemistry collaboration agreement with Synteris, Inc. (*Synteris*), a leading medicinal chemistry and collaborative drug discovery company. We believe this important collaboration will further our drug rescue initiatives with the support of Synteris' medicinal chemistry expertise. In addition to providing flexible, real-time contract medicinal chemistry services in support of our drug rescue programs, we anticipate potential collaborative opportunities with Synteris wherein we may jointly identify and develop *Drug Rescue Variants*.

**Intellectual Property**

***Intellectual Property Rights Underlying our Human Clinical Trials in a Test Tube Platform***

We have established our intellectual property rights to the technology underlying our *Human Clinical Trials in a Test Tube* platform through a combination of exclusive and non-exclusive licenses, patent, and trade secret laws. To our knowledge, we are the first stem cell company focused primarily on stem cell technology-based drug rescue. We have assembled an intellectual property portfolio around the use of pluripotent stem cell technologies in drug discovery and development and with specific application to drug rescue. The differentiation protocols we have licensed direct the differentiation of pluripotent stem cells through:

- a combination of growth factors (molecules that stimulate the growth of cells);
- the experimentally controlled regulation of developmental genes, which is critical for determining what differentiation path a human cell will take; and
- precise selection of immature cell populations for further growth and development.

By influencing key branch points in the cellular differentiation process, our pluripotent stem cell technologies can produce fully-differentiated, non-transformed, highly functional human cells *in vitro* in an efficient, highly pure and reproducible process.

As of the date of this report, we either own or have licensed 43 issued U.S. patents and 12 U.S. patent applications and certain foreign counterparts relating to the stem cell technologies that underlie our *Human Clinical Trials in a Test Tube* platform. Our material rights and obligations with respect to these patents and patent applications are summarized below:

**Licenses**

***National Jewish Health (NJH) Exclusive License***

We have exclusive licenses to seven issued U.S. patents held by NJH, certain of which expire in November 2014. No foreign counterparts to these U.S. patents and patent application have been obtained. These U.S. patents contain claims covering composition of matter relating to specific populations of cells and precursors, methods to produce such cells, and applications of such cells for ES Cell-derived immature pluripotent precursors of all the cells of the mesoderm and endoderm lineages. Among other cell types, this covers cells of the heart, liver, pancreas, blood, connective tissues, vascular system, gut and lung cells.

Under this license agreement, we may become required to pay to NJH 1% of our total revenues up to \$30 million in each calendar year and 0.5% of all revenues for amounts greater than \$30 million, with minimum annual payments of \$25,000. Additionally, we may become obligated under the agreement to make certain royalty payments on sales of products based on NJH's patents or the sublicensing of such technology. The royalty payments are subject to anti-stacking provisions which would reduce our payments by a percentage of any royalty payments and fees paid to third parties who have licensed necessary intellectual property to us. This agreement remains in force for the life of the patents so long as neither party elects to terminate the agreement upon the other party's uncured breach or default of an obligation under the agreement. We also have the right to terminate the agreement at any time without cause.

*Icahn School of Medicine at Mount Sinai School (MSSM) Exclusive License*

We have an exclusive, field restricted, license to two U.S. patents and two U.S. patent applications, and their foreign counterparts filed by MSSM. Foreign counterparts have been filed in Australia (two), Canada (two), Europe (two), Japan, Hong Kong and Singapore. Two of the U.S. applications have been issued and the foreign counterparts in Australia and Singapore have been issued, while a counterpart in Europe is pending. These patent applications have claims covering composition of matter relating to specific populations of cells and precursors, methods to produce such cells, and applications of such cells, including:

- the use of certain growth factors to generate mesoderm (that is, the precursors capable of developing into cells of the heart, blood system, connective tissues, and vascular system) from hESCs;
- the use of certain growth factors to generate endoderm (that is, the precursors capable of developing into cells of the liver, pancreas, lungs, gut, intestines, thymus, thyroid gland, bladder, and parts of the auditory system) from hESCs; and
- applications of cells derived from mesoderm and endoderm precursors, especially those relating to drug discovery and testing for applications in the field of *in vitro* drug discovery and development applications.

This license agreement requires us to pay annual license and patent prosecution and maintenance fees and royalty payments based on product sales and services that are covered by the MSSM patent applications, as well as for any revenues received from sublicensing. Any drug candidates that we develop, including any *Drug Rescue Variants*, will only require royalty payments to the extent they require the practice of the licensed technology. To the extent we incur royalty payment obligations from other business activities, the royalty payments are subject to anti-stacking provisions which reduce our payments by a percentage of any royalty payments or fees paid to third parties who have licensed necessary intellectual property to us. The license agreement will remain in force for the life of the patents so long as neither party terminates the agreement for cause (i) due to a material breach or default in performance of any provision of the agreement that is not cured within 60 days or (ii) in the case of failure to pay amounts due within 30 days.

*Wisconsin Alumni Research Foundation (WARF) Non-Exclusive License*

We have non-exclusive licenses to over 30 issued stem cell-related U.S. patents, 14 stem cell-related U.S. patent applications, and certain foreign counterparts held by WARF, for applications in the field of *in vitro* drug discovery and development. Foreign counterparts have been filed in Australia, Canada, Europe, China, India, Hong Kong, Israel, Brazil, South Korea, India, Mexico, and New Zealand. The subject matter of these patents includes specific hESC lines and composition of matter and use claims relating to hESCs important to drug discovery, and drug rescue screening. We have rights to:

- use the technology for internal research and drug development;
- provide discovery and screening services to third parties; and
- market and sell research products (that is, cellular assays incorporating the licensed technology).

This license agreement requires us to make royalty payments based on product sales and services that incorporate the licensed technology. We do not believe that any drug rescue candidates to be developed by us will incorporate the licensed technology and, therefore, no royalty payments will be payable. Nevertheless, there is a minimum royalty of \$20,000 per calendar year. There are also milestone fees related to the discovery of therapeutic molecules, though no royalties are owed on such molecules. The royalty payments are subject to anti-stacking provisions which reduce our payments by a percentage of any royalty payments paid to third parties who have licensed necessary intellectual property to us. The agreement remains in force for the life of the patents so long as we pay all monies due and do not breach any covenants, and such breach or default is uncured for 90 days. We may also terminate the agreement at any time upon 60 days' notice. There are no reach through royalties on customer-owned small molecule or biologic drug products developed using the licensed technologies.

**Our Patents**

We have filed two U.S. patent applications on liver stem cells and their applications in drug development relating to toxicity testing, both of which have issued. Of the related international filings, European, Canadian and Korean patents were issued. The European patent has been validated in 11 European countries. We have filed a U.S. patent application, with foreign counterpart filing in Canada and Europe, directed to methods for producing human pluripotent stem cell-derived endocrine cells of the pancreas, with a specific focus on beta-islet cells, the cells that produce insulin, and their uses in diabetes drug discovery and screening.

The material patents currently related to the generation of human heart and liver cells for use in connection with our drug rescue activities are set forth below:

| <b>Territory</b> | <b>Patent No.</b> | <b>General Subject Matter</b>                    | <b>Expiration</b> |
|------------------|-------------------|--|-------------------|
| US               | 7,763,466         | Method to produce endoderm cells                 | May 2025          |
| US               | 7,955,849         | Method of enriching population of mesoderm cells | May 2023          |
| US               | 8,143,009         | Toxicity typing using liver stem cells           | June 2023         |
| US               | 8,512,957         | Toxicity typing using liver stem cells           | June 2021         |

With respect to AV-101, we have filed three new U.S. patent applications.

**Trade Secrets**

We rely, in part, on trade secrets for protection of some of our intellectual property. We attempt to protect trade secrets by entering into confidentiality agreements with third parties, employees and consultants. Our employees and consultants also sign agreements requiring that they assign to us their interests in patents and copyrights arising from their work for us.

**Sponsored Research Collaborations and Intellectual Property Rights**

*University Health Network, McEwen Centre for Regenerative Medicine, Toronto, Ontario*

We have a long-term strategic stem cell research collaboration with our co-founder, Dr. Gordon Keller, Director of the UHN's McEwen Centre, focused on, among other things, developing improved methods for differentiation of cardiomyocytes (heart cells) from pluripotent stem cells, and their uses in biological assay systems for drug discovery and development. Pursuant to our sponsored research collaboration agreement with UHN, we have the right to acquire exclusive worldwide rights to any inventions arising from studies we sponsor, under pre-negotiated license terms. Such pre-negotiated terms provide for royalty payments based on product sales that incorporate the licensed technology and milestone payments based on the achievement of certain events. Any *Drug Rescue Variants* that we develop will not incorporate the licensed technology and, therefore, will not require any royalty payments. To the extent we incur royalty payment obligations from other business activities, the royalty payments will be subject to anti-stacking provisions, which reduce our payments by a percentage of any royalty payments paid to third parties who have licensed necessary intellectual property to us. These licenses will remain in force for so long as we have an obligation to make royalty or milestone payments to UHN, but may be terminated earlier upon mutual consent, by us at any time, or by UHN for our breach of any material provision of the license agreement that is not cured within 90 days. We also have the exclusive option to sponsor research for similar cartilage, liver, pancreas and blood cell projects with similar licensing rights.

The sponsored research collaboration agreement with UHN, as amended, has a term of ten years, ending on September 18, 2017. Our 2012/2013 sponsored research project budget under the agreement ended on September 30, 2013. We are currently in discussions with Dr. Keller and UHN regarding the scope of our future sponsored research project budget under the agreement, and we anticipate finalizing such budget within the near term. The ten-year term of the agreement is subject to renewal upon mutual agreement of the parties. The agreement may be terminated earlier upon a material breach by either party that is not cured within 30 days. UHN may elect to terminate the agreement if we become insolvent or if any license granted pursuant to the agreement is prematurely terminated. We have the option to terminate the agreement if Dr. Keller stops conducting his research or ceases to work for UHN.

*UHN License for Stem Cell Culture Technology*

In April 2012, we licensed breakthrough stem cell culture technology from UHN's McEwen Centre. We intend to utilize the licensed technology to develop hematopoietic precursor stem cells from human pluripotent stem cells, with the goal of developing drug screening and cell therapy applications for human blood system disorders. The breakthrough technology is included in a new United States patent application. We believe this stem cell technology dramatically advances our ability to produce and purify this important blood stem cell precursor for both in vitro drug screening and in vivo cell therapy applications. In addition to defining new cell culture methods for our use, the technology describes the surface characteristics of stem cell-derived adult hematopoietic stem cells. Most groups study embryonic blood development from stem cells, but, for the first time, we are now able to not only purify the stem cell-derived precursor of all adult hematopoietic cells, but also pinpoint the precise timing when adult blood cell differentiation takes place in these cultures. We believe these early cells have the potential to be the precursors of the ultimate adult, bone marrow-repopulating hematopoietic stem cells to repopulate the blood and immune system when transplanted into patients prepared for bone marrow transplantation. These cells have important potential therapeutic applications for the restoration of healthy blood and immune systems in individuals undergoing transplantation therapies for cancer, organ grafts, HIV infections or for acquired or genetic blood and immune deficiencies.

***AV-101-Related Intellectual Property***

We have exclusive licenses to issued U.S. patents related to the use and function of AV-101, and various central nervous system (CNS)-active molecules related to AV-101. These patents are held by the University of Maryland, Baltimore, the Cornell Research Foundation, Inc. and Aventis, Inc. The principle U.S. method of use patent related to AV-101 expired in February 2011. Foreign counterparts to that U.S. patent expired in February 2012. However, in 2013 and through the date of this report, we have filed three new U.S. patent applications relating to AV-101. In addition, among the key components of our commercial protection strategy with respect to AV-101 is the New Drug Product Exclusivity provided by the FDA under section 505(c)(3)(E) and 505(j)(5)(F) of the Federal Food, Drug, and Cosmetic Act (FDCA). The FDA's New Drug Product Exclusivity is available for new chemical entities (NCEs) such as AV-101, which, by definition, are innovative and have not been approved previously by the FDA, either alone or in combination. The FDA's New Drug Product Exclusivity protection provides the holder of an FDA-approved new drug application (NDA) five (5) years of protection from new competition in the U.S. marketplace for the innovation represented by its approved new drug product. This protection precludes FDA approval of certain generic drug applications under section 505(b)(2) of the FDCA, as well certain abbreviated new drug applications (ANDAs), during the five-year exclusivity period, except that such applications may be submitted after four years if they contain a certification of patent invalidity or non-infringement.

Under the terms of our license agreement, we may be obligated to make royalty payments on 2% of net sales of products using the unexpired patent rights, if any, including products containing compounds covered by the patent rights. Additionally, we may be required to pay a 1% royalty on net sales of combination products that use unexpired patent rights, if any, or contain compounds covered by the patent rights. Consequently, future sales of AV-101 may be subject to a 2% royalty obligation. There are no license, milestone or maintenance fees under the agreement. The agreement remains in force until the later of: (i) the expiration or invalidation of the last patent right; and (ii) 10 years after the first commercial sale of the first product that uses the patent rights or contains a compound covered by the patent rights. This agreement may also be terminated earlier at the election of the licensor upon our failure to pay any monies due, our failure to provide updates and reports to the licensor, our failure to provide the necessary financial and other resources required to develop the products, or our failure to cure within 90 days any breach of any provision of the agreement. We may also terminate the agreement at any time upon 90 days' written notice so long as we make all payments due through the effective date of termination.

**Research and Development**

Our research and development expense was approximately \$2.5 million and \$3.4 million for the years ended March 31, 2014 and 2013, respectively, or approximately 49% of our operating expenses for each of the years ended March 31, 2014 and 2013. Our research and development expense consists of both internal and external expenses incurred in sponsored stem cell research and drug development activities, costs associated with the development of AV-101 and costs related to the licensing, application and prosecution of our intellectual property.

## Competition

We believe that our human pluripotent stem cell (*hPSC*) technology platform, *Human Clinical Trials in a Test Tube*, the *hPSC*-derived human cells we produce, and the customized human cell-based assay systems we have formulated and developed are capable of being competitive in the diverse and rapidly growing global stem cell and regenerative medicine markets, including markets involving the sale of *hPSC*-derived cells to third-parties for their *in vitro* drug discovery and safety testing, contract predictive toxicology drug screening services for third parties, internal drug discovery, development and rescue of new molecular entities (*NMEs*), and regenerative medicine, including *in vivo* cell therapy research and development. A representative list of such biopharmaceutical companies pursuing one or more of these potential applications of adult and/or pluripotent stem cell technology includes the following: Acea Biosciences, Advanced Cell Technology, Athersys, BioTime, Cellectis Bioresearch, Cellular Dynamics, Cellerant Therapeutics, Cytori Therapeutics, HemoGenix, International Stem Cell, NeoStem, Neuralstem, Organovo Holdings, PluriStem Therapeutics, Stem Cells, and Stemina BioMarker Discovery. Pharmaceutical companies and other established corporations such as Bristol-Myers Squibb, GE Healthcare Life Sciences, GlaxoSmithKline, Life Technologies, Novartis, Pfizer, Roche Holdings and others have been and are expected to continue pursuing internally various stem cell-related research and development programs. We anticipate that acceptance and use of *hPSC* technology for drug development and regenerative medicine will continue to occur and increase at pharmaceutical and biotechnology companies in the future.

We believe the best and most valuable near term commercial application of our *Human Clinical Trials in a Test Tube* platform is internal production of *NMEs*, which we refer to as *Drug Rescue Variants*, through small molecule drug rescue. We believe that the stem cell technologies underlying our *Human Clinical Trials in a Test Tube* platform and our primary focus on opportunities to produce small molecule *NMEs* through drug rescue provide us substantial competitive advantages associated with application of human biology at the front end of the drug development process, before animal and human testing. Although we believe that our model for the application of human pluripotent stem cell technology for drug rescue is novel, significant competition may arise or otherwise increase considerably as the acceptance and use of *hPSC* technology, the sale of *hPSC*-derived human heart and liver cells, and the availability of *hPSC*-related contract predictive toxicology screening services, for drug discovery, development and rescue, as well as cell therapy and regenerative medicine, continue to become more widespread throughout the academic research community and the pharmaceutical and biotechnology industries. In addition, significant competition may arise from those academic research institutions, contract research organizations, and biopharmaceutical companies currently producing or capable of producing, currently using or capable of using, *hPSC*-derived heart cells and liver cells for third-party sales, contract screening or cell therapy research and development, that elect or their customers elect to transform their current business operations to include internal drug rescue and development of small molecule *NMEs* in a manner similar to our drug rescue model.

With respect to AV-101, we believe that a range of pharmaceutical and biotechnology companies have programs to develop small molecule drug candidates for the treatment of neuropathic pain, epilepsy, depression, Parkinson's disease and other neurological conditions and diseases, including Abbott Laboratories, GlaxoSmithKline, Johnson & Johnson, Novartis, and Pfizer. We expect that AV-101 will have to compete with a variety of therapeutic products and procedures. With respect to each *Drug Rescue Variant* we are able to produce, we anticipate that a range of pharmaceutical and biotechnology companies will have programs to develop small molecule drug candidates or biologics for the treatment of the diseases or conditions targeted by each such *Drug Rescue Variant*.

## Government Regulation

### United States

With respect to our stem cell research and development in the U.S., the U.S. government has established requirements and procedures relating to the isolation and derivation of certain stem cell lines and the availability of federal funds for research and development programs involving those lines. All of the stem cell lines that we are using were either isolated under procedures that meet U.S. government requirements and are approved for funding from the U.S. government, or were isolated under procedures that meet U.S. government requirements.

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With respect to drug development, government authorities at the federal, state and local levels in the U.S. and other countries extensively regulate, among other things, the research, development, testing, manufacture, labeling, promotion, advertising, distribution, marketing, pricing and export and import of pharmaceutical products such as those we are developing. In the U.S., pharmaceuticals, biologics and medical devices are subject to rigorous FDA regulation. Federal and state statutes and regulations in the United States govern, among other things, the testing, manufacture, safety, efficacy, labeling, storage, export, record keeping, approval, marketing, advertising and promotion of our potential drug rescue variants. The information that must be submitted to the FDA in order to obtain approval to market a new drug varies depending on whether the drug is a new product whose safety and effectiveness has not previously been demonstrated in humans, or a drug whose active ingredient(s) and certain other properties are the same as those of a previously approved drug. Product development and approval within this regulatory framework takes a number of years and involves significant uncertainty combined with the expenditure of substantial resources.

Companies seeking FDA approval to sell a new prescription drug in the United States must test it in various ways. Currently, first are laboratory and animal tests. Next are tests in humans to see if the drug candidate is safe and effective when used to treat or diagnose a disease. After testing the drug candidate, the company developing it then sends the FDA an application called a New Drug Application (*NDA*). Some drug candidates are made out of biologic materials, including human cells, such as the human cells derived from human pluripotent stem cells. Instead of an NDA, new biologic drug candidates are approved using a Biologics License Application (*BLA*). Whether an NDA or a BLA, the application includes:

- the drug candidate's test results;
- manufacturing information to demonstrate the company developing the drug candidate can properly manufacture it; and
- the proposed label for the drug candidate, which provides necessary information about the drug candidate, including uses for which it has been shown to be effective, possible risks, and how to use it.

If a review by FDA physicians and scientists shows the drug candidate's benefits outweigh its known risks and the drug candidate can be manufactured in a way that ensures a quality product, the drug candidate is approved and can be marketed in the United States.

New drug and biological product development and approval takes many years, involves the expenditure of substantial resources and is uncertain to succeed. Many new drug and biological candidates appear promising in early stages of development but ultimately do not reach the market because they cannot meet FDA or other regulatory requirements. In addition, the current regulatory framework may change through regulatory, legislative or judicial actions or that additional regulations will not arise during development that may affect approval, delay the submission or review of an application.

The activities required before a new drug or biological candidate may be approved for marketing in the U.S. begin with nonclinical testing, which includes laboratory evaluation and animal studies to assess the potential safety and efficacy of the product as formulated. Results of nonclinical studies are summarized in an Investigational New Drug (*IND*) application to the FDA. Human clinical trials may begin 30 days following submission of an IND application, unless the FDA requires additional time to review the application or raise questions.

Clinical testing involves the administration of the new drug or biological candidate to healthy human volunteers or to patients under the supervision of a qualified principal investigator, usually a physician, pursuant to an FDA-reviewed protocol. Each clinical study is conducted under the auspices of an institutional review board (*IRB*) at each of the institutions at which the study will be conducted. A clinical plan, or "protocol," accompanied by the approval of an IRB, must be submitted to the FDA as part of the IND application prior to commencement of each clinical trial. Human clinical trials are conducted typically in three sequential phases. Phase I trials primarily consist of testing the product's safety in a small number of patients or healthy volunteers. In Phase II trials, the safety and efficacy of the biological candidate is evaluated in a specific patient population. Phase III trials typically involve additional testing for safety and clinical efficacy in an expanded patient population at geographically dispersed sites. The FDA may order the temporary or permanent discontinuance of a nonclinical or clinical trial at any time for a variety of reasons, particularly if safety concerns exist.

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All procedures we use to obtain clinical samples, and the procedures we use to isolate hESCs, are consistent with the informed consent and ethical guidelines promulgated by either the U.S. National Academy of Science, the International Society of Stem Cell Research (*ISSCR*), or the NIH. These procedures and documentation have been reviewed by an external Stem Cell Research Oversight Committee, and all cell lines we use have been approved under one or more of these guidelines.

The U.S. government and its agencies on July 7, 2009 published guidelines for the ethical derivation of hESCs required for receiving federal funding for hESC research. Should we seek NIH funding for our stem cell research and development, our request would involve the use of hESC lines that meet the NIH guidelines for NIH funding. In the U.S., the President's Council on Bioethics monitors stem cell research, and may make recommendations from time to time that could place restrictions on the scope of research using human embryonic or fetal tissue. Although numerous states in the U.S. are considering, or have in place, legislation relating to stem cell research, including California whose voters approved Proposition 71 to provide up to \$3 billion of state funding for stem cell research in California, it is not yet clear what affect, if any, state actions may have on our ability to commercialize stem cell technologies.

**Canada**

In Canada, stem cell research and development is governed by two policy documents and by one legislative statute: the Guidelines for Human Pluripotent Stem Cell Research (the *Guidelines*) issued by the Canadian Institutes of Health Research; the Tri-Council Statement: Ethical Conduct for Research Involving Humans (the *TCPS*); and the Assisted Human Reproduction Act (the *Act*). The Guidelines and the TCPS govern stem cell research conducted by, or under the auspices of, institutions funded by the federal government. Should we seek funding from Canadian government agencies or should we conduct research under the auspices of an institution so funded, we may have to ensure the compliance of such research with the ethical rules prescribed by the Guidelines and the TCPS.

The Act subjects all research conducted in Canada involving the human embryo, including hESC derivation (but not the stem cells once derived), to a licensing process overseen by a federal licensing agency. However, as of the date of this report, the provisions of the Act regarding the licensing of hESC derivation were not in force.

We are not currently conducting stem cell research in Canada. We are, however, sponsoring pluripotent stem cell research by Dr. Gordon Keller at UHN's McEwen Centre. We anticipate conducting pluripotent stem cell research (with both hESCs and hiPSCs), in collaboration with Dr. Keller and his research team, at UHN during 2014 and beyond pursuant to our long term sponsored research collaboration with Dr. Keller and UHN. Should the provisions of the Act come into force, we may have to apply for a license for all hESC research we may sponsor or conduct in Canada and ensure compliance of such research with the provisions of the Act.

**Foreign**

In addition to regulations in the U.S., we may be subject to a variety of foreign regulations governing clinical trials and commercial sales and distribution of our products outside of the U.S. Whether or not we obtain FDA approval for a product, we must obtain approval of a product by the comparable regulatory authorities of foreign countries before we can commence clinical trials or marketing of the product in those countries. The approval process varies from country to country, and the time may be longer or shorter than that required for FDA approval. The requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement vary greatly from country to country.



### **Subsidiaries and Inter-Corporate Relationships**

VistaGen Therapeutics, Inc., a California corporation, is our wholly-owned subsidiary and has the following two wholly-owned subsidiaries: VistaStem Canada Inc., a corporation incorporated pursuant to the laws of the Province of Ontario, intended to facilitate our stem cell-based research and development and drug rescue activities in Ontario, Canada including our collaboration with Dr. Keller and UHN should we elect to expand our U.S. operations into Canada; and Artemis Neuroscience, Inc., a corporation incorporated pursuant to the laws of the State of Maryland and focused on development of AV-101. The operations of VistaGen Therapeutics, Inc., a California corporation, and each of its two wholly-owned subsidiaries are managed by our senior management team based in South San Francisco, California.

### **Employees**

We have ten full-time employees, four of whom have doctorate degrees. Seven full-time employees work in research and development and laboratory support services and three full-time employees work in general and administrative roles. Staffing for all other functional areas is achieved through strategic relationships with service providers and consultants, each of whom provides services on an as-needed basis, including human resources and payroll, accounting and public company reporting, information technology, facilities, legal, stock plan administration, investor relations and web site maintenance, regulatory affairs, and FDA program management. In addition, we currently conduct some of our research and development efforts through sponsored research relationships with stem cell scientists at academic research institutions in the U.S. and Canada, including Dr. Keller's laboratories at UHN. See "Business – Strategic Transactions and Relationships."

None of our employees is represented by a labor union or is subject to a collective bargaining agreement. We believe that our current relationship with all of our employees is good.

### **Environmental Regulation**

Our business does not require us to comply with any particular environmental regulations.

### **Item 1A. Risk Factors**

*Investing in our common stock involves a high degree of risk. You should consider carefully the risks and uncertainties described below, together with all of the other information in this Annual Report on Form 10-K, including our financial statements and related notes, before deciding whether to purchase shares of our common stock. If any of the following risks are realized, our business, financial condition and results of operations could be materially and adversely affected.*

#### **Risks Related to Our Business and Strategy**

*We are a development stage biotechnology company with no approved products and limited experience developing new drug, biological and/or regenerative medicine candidates, including conducting clinical trials and other areas required for the successful development and commercialization of therapeutic products, which makes it difficult to assess our future viability.*

We are a development stage biotechnology company. Since inception, we have generated approximately \$16.4 million of revenues from strategic collaborations and grant awards. However, we currently have no approved products and generate no revenues, and we have not yet fully demonstrated an ability to overcome many of the fundamental risks and uncertainties frequently encountered by development stage companies in new and rapidly evolving fields of technology, particularly biotechnology. To execute our business plan successfully, we will need to accomplish the following fundamental objectives, either on our own or with strategic collaborators:

- produce product candidates;
- develop and obtain required regulatory approvals for commercialization of products we produce;
- maintain, leverage and expand our intellectual property portfolio;
- establish and maintain sales, distribution and marketing capabilities;
- gain market acceptance for our products; and
- obtain adequate capital resources and manage our spending as costs and expenses increase due to research, production, development, regulatory approval and commercialization of product candidates.

Moreover, we and any future strategic partner will need to receive regulatory approval for any new drug candidate, including each *Drug Rescue Variant*, biological candidate or regenerative medicine product before it may be marketed and distributed. Such regulatory approval will require, among numerous other things, completing carefully controlled and well-designed clinical trials demonstrating the safety and efficacy of each new product candidate. This process is lengthy, expensive and uncertain. As a company, we have limited experience developing new drug candidates, including *Drug Rescue Variants*, biological candidates or regenerative medicine products, including conducting clinical trials and in other areas required for the successful development and commercialization of therapeutic products. Such trials will require additional financial and management resources, third-party collaborators with the requisite clinical experience or reliance on third party clinical investigators, contract research organizations and independent consultants. Relying on third parties may force us to encounter delays that are outside of our control, which could materially harm our business.

If we are unsuccessful in accomplishing these fundamental objectives, or if we encounter delays in the regulatory approval process beyond our control, we may not be able to develop product candidates, raise capital, expand our business or continue our operations.

***Our future success is highly dependent upon our ability to produce product candidates, including Drug Rescue Variants, using stem cell technology, human cells derived from stem cells, our proprietary human cell-based bioassay systems and medicinal chemistry, and we cannot provide any assurance that we will successfully produce Drug Rescue Variants or other product candidates, or that, if produced, any of our Drug Rescue Variants or other product candidates will be developed and commercialized.***

Research programs designed to identify and produce product candidates, including *Drug Rescue Variants*, require substantial technical, financial and human resources, whether or not any product candidates are ultimately identified and produced. In particular, our drug rescue programs may initially show promise in identifying potential *Drug Rescue Variants*, yet fail to yield lead *Drug Rescue Variants* suitable for preclinical, clinical development or commercialization for many reasons, including the following:

- our research methodology may not be successful in identifying potential *Drug Rescue Candidates*;
- competitors may develop alternatives that render our *Drug Rescue Variants* obsolete;
- a *Drug Rescue Variant* may, on further study, be shown to have harmful side effects or other characteristics that indicate it is unlikely to be effective or otherwise does not meet applicable regulatory criteria;
- a *Drug Rescue Variant* may not be capable of being produced in commercial quantities at an acceptable cost, or at all; or
- a *Drug Rescue Variant* may not be accepted as safe and effective by regulatory authorities, patients, the medical community or third-party payors.

Our future success depends heavily on our ability to use stem cell technology, human cells derived from stem cells, proprietary human cell-based bioassay systems, especially *CardioSafe 3D*, and medicinal chemistry to produce *Drug Rescue Variants* and, develop, obtain regulatory approval for, and commercialize lead *Drug Rescue Variants*, on our own or in strategic collaborations, which may never occur. We currently generate no revenues, and we may never be able to develop or commercialize a marketable drug.

We have limited operating history with respect to the identification and assessment of potential *Drug Rescue Candidates* and no operating history with respect to the production of *Drug Rescue Variants*, and we may never be able to produce a *Drug Rescue Variant*. If we are unable to identify suitable *Drug Rescue Candidates* for our drug rescue programs, including AV-101, or produce suitable lead *Drug Rescue Variants* for license to and preclinical and clinical development by pharmaceutical companies and others, we may not be able to obtain sufficient revenues in future periods, which likely would result in significant harm to our financial position and adversely impact our stock price. There are a number of factors, in addition to the utility of *CardioSafe 3D*, that may impact our ability to identify and assess *Drug Rescue Candidates* and produce, develop and commercialize *Drug Rescue Variants*, independently or with strategic partners, including:

- our ability to identify potential *Drug Rescue Candidates* in the public domain, obtain sufficient quantities of them, and assess them using our assay systems;
- if we seek to rescue *Drug Rescue Candidates* that are not available to us in the public domain, the extent to which third parties may be willing to license or sell *Drug Rescue Candidates* to us on commercially reasonable terms;
- our medicinal chemistry collaborator's ability to design and produce proprietary *Drug Rescue Variants* based on the novel biology and structure-function insight we provide using *CardioSafe 3D* or *LiverSafe 3D*; and
- financial resources available to us to develop and commercialize lead *Drug Rescue Variants* internally, or, if we license them to strategic partners, the resources such partners choose to dedicate to development and commercialization of any *Drug Rescue Variants* licensed from us.

Even if we do produce a *Drug Rescue Variant*, we can give no assurance that we will be able to develop and commercialize it as a marketable drug, on our own or in a strategic collaboration. Before we generate any revenues from product sales, we must produce additional product candidates through drug rescue and we or our potential strategic collaborator must complete preclinical and clinical development of one or more of our product candidates, conduct human subject research, submit clinical and manufacturing data to the FDA, qualify a third party contract manufacturer, receive regulatory approval in one or more jurisdictions, satisfy the FDA that our contract manufacturer is capable of manufacturing the product in compliance with cGMP, build a commercial organization, make substantial investments and undertake significant marketing efforts ourselves or in partnership with others. We are not permitted to market or promote any of our product candidates before we receive regulatory approval from the FDA or comparable foreign regulatory authorities, and we may never receive such regulatory approval for any of our product candidates.

We have not previously submitted a biologics license application, or BLA, or a new drug application or NDA, to the FDA, or similar drug approval filings to comparable foreign authorities, for any product candidate. We cannot be certain that any of our product candidates will be successful in clinical trials or receive regulatory approval. Further, our product candidates may not receive regulatory approval even if they are successful in clinical trials. If we do not receive regulatory approvals for our product candidates, we may not be able to continue our operations. Even if we successfully obtain regulatory approvals to market one or more of our product candidates, our revenues will be dependent, in part, upon the size of the markets in the territories for which we gain regulatory approval and have commercial rights. If the markets for patient subsets that we are targeting are not as significant as we estimate, we may not generate significant revenues from sales of such products, if approved.

We or our potential collaborator may also seek regulatory approval to commercialize our product candidates in the United States, the European Union and potentially in additional foreign countries. While the scope of regulatory approval is similar in other countries, to obtain separate regulatory approval in many other countries we must comply with numerous and varying regulatory requirements of such countries regarding safety and efficacy, clinical trials and commercial sales, pricing and distribution of our product candidates, and we cannot predict success in these jurisdictions.

***Our CardioSafe 3D internal validation studies have not been subjected to extensive external peer review or validation.***

Our proprietary internal studies conducted to validate the utility of *CardioSafe 3D* for drug rescue, including our ability to use it to predict the cardiac effects, both toxic and nontoxic, of *Drug Rescue Candidates*, have not been subjected to extensive external peer review or validation. It is possible, therefore, that the results we have obtained from our successful internal validation studies may not be replicable by external peer reviewers. We are currently focused on identifying and assessing *Drug Rescue Candidates* available in the public domain. However, should we seek to license or acquire *Drug Rescue Candidates* from third-parties, and such third-parties cannot replicate our results or do not have confidence in the capabilities of *CardioSafe 3D*, it may be difficult for us to acquire from them certain *Drug Rescue Candidates* which might be of interest to us. Even if such results can be replicated by external peer reviewers or other third-parties, they may nevertheless conclude that their current screening models are better than our *CardioSafe 3D* and that a license to the *Drug Rescue Candidate* we seek from them is not warranted. Our drug rescue business model is predicated on our ability to identify and, if information is not otherwise available in the public domain, obtain licenses from third-parties to *Drug Rescue Candidates* of interest to us. If third-party licenses are required, and if we cannot obtain such licenses to on reasonable terms, or at all, our business may be adversely affected.

***If CardioSafe 3D fails to predict accurately and efficiently the cardiac effects, both toxic and nontoxic, of Drug Rescue Candidates and Drug Rescue Variants, then our drug rescue business will be adversely affected.***

Our success is highly dependent on our ability to use *CardioSafe 3D* to identify and predict, accurately and efficiently, the potential toxic and nontoxic cardiac effects of *Drug Rescue Candidates* and *Drug Rescue Variants*. If *CardioSafe 3D* is not capable of providing physiologically relevant and clinically predictive information regarding human cardiac biology, our drug rescue business will be adversely affected.

***We have not yet fully validated LiverSafe 3D for potential drug rescue applications, and we may never do so.***

We have successfully developed proprietary protocols for controlling the differentiation of human pluripotent stem cells to produce functional, mature, adult liver cells. However, we have not yet fully validated our ability to use the human liver cells we produce for *LiverSafe 3D* to predict important biological effects, both toxic and nontoxic, of reference drugs, *Drug Rescue Candidates* or *Drug Rescue Variants* on the human liver, including drug-induced liver injury and adverse drug-drug interactions. Furthermore, we may never be able to do so, which could adversely affect our business and the potential applications of *LiverSafe 3D* for drug rescue and regenerative medicine.

***CardioSafe 3D, and, when validated, LiverSafe 3D may not be meaningfully more predictive of the behavior of human cells than existing methods.***

The success of our drug rescue business is highly dependent, in the first instance, upon *CardioSafe 3D*, and, in the second instance, when validated, *LiverSafe 3D*, being more accurate, efficient and clinically predictive than long-established surrogate safety models, including animal cells and live animals, and immortalized, primary and transformed cells, currently used by pharmaceutical companies and others. We cannot give assurance that *CardioSafe 3D*, and, when validated, *LiverSafe 3D*, will be more efficient or accurate at predicting the heart or liver safety of new drug candidates than the testing models currently used. If *CardioSafe 3D* and *LiverSafe 3D* fail to provide a meaningful difference compared to existing or new models in predicting the behavior of human heart and liver cells, respectively, their utility for drug rescue will be limited and our drug rescue business will be adversely affected.

***We may invest in producing Drug Rescue Variants for which there proves to be no demand.***

To generate revenue from our drug rescue activities, we must produce *Drug Rescue Variants* for which there proves to be demand within the healthcare marketplace, and, if we intend to out-license a particular *Drug Rescue Variant* for development and commercialization prior to market approval, then also among pharmaceutical companies and other potential strategic collaborators. However, we may produce *Drug Rescue Variants* for which there proves to be no or limited demand in the healthcare market and/or among pharmaceutical companies and others. If we misinterpret market conditions, underestimate development costs and/or seek to rescue the wrong *Drug Rescue Candidates*, we may fail to generate sufficient revenue or other value, on our own or in collaboration with others, to justify our investments, and our drug rescue business may be adversely affected.

***We may experience difficulty in producing human cells and our future stem cell technology research and development efforts may not be successful within the timeline anticipated, if at all.***

Our human pluripotent stem cell technology is new and technically complex, and the time and resources necessary to develop new cell types and customized bioassay systems are difficult to predict in advance. We intend to devote significant personnel and financial resources to research and development activities designed to expand, in the case of drug rescue, and explore, in the case of regenerative medicine, potential applications of our *Human Clinical Trials in a Test Tube* platform. In particular, we are planning to conduct development programs related to producing and using functional, mature adult liver cells to validate *LiverSafe 3D* as a novel bioassay system for drug rescue, as well as exploratory nonclinical regenerative medicine programs involving blood, bone, cartilage, heart, liver and insulin-producing pancreatic beta-islet cells. Although we and our collaborators have developed proprietary protocols for the production of multiple differentiated cell types, we may encounter difficulties in differentiating particular cell types, even when following these proprietary protocols. These difficulties may result in delays in production of certain cells, assessment of certain *Drug Rescue Candidates* and *Drug Rescue Variants*, and performance of certain exploratory nonclinical regenerative medicine studies. In the past, our stem cell research and development projects have been significantly delayed when we encountered unanticipated difficulties in differentiating human pluripotent stem cells into heart, liver and pancreatic cells. Although we have overcome such difficulties in the past, we may have similar delays in the future, and we may not be able to overcome them or obtain any benefits from our future stem cell technology research and development activities. Any delay or failure by us, for example, to produce functional, mature blood, bone, cartilage, liver and insulin-producing pancreatic beta-islet cells could have a substantial adverse effect on our potential drug rescue and regenerative medicine business opportunities and results of operations.

***If we are unable to keep up with rapid technological changes in our field, we will be unable to operate profitably.***

We are engaged in activities in the life sciences field, which is characterized by rapid technological changes, frequent new product introductions, changing needs and preferences, emerging competition, and evolving industry standards. If we fail to anticipate or respond adequately to technological developments, our business, revenue, financial condition and operating results could suffer materially. Although we believe we are the first stem cell technology company focused primarily on drug rescue, we anticipate that we will face increased competition in the future as competitors develop or access new or improved bioassay systems and explore and enter the drug rescue market with new technologies. Competitors may have significantly greater financial, manufacturing, sales and marketing resources and may be able to respond more quickly and effectively than we can to new opportunities. In light of these advantages, even if our technology is effective in producing *Drug Rescue Variants*, potential development partners might prefer new drug candidates available from others or develop their own new drug candidates in lieu of licensing or purchasing our *Drug Rescue Variants*. We may not be able to compete effectively against these organizations. Our failure to compete effectively could materially and adversely affect our business, financial condition and results of operations.

***We face substantial competition, which may result in others discovering, developing or commercializing product candidates before, or more successfully, than we do.***

Our future success depends on our ability to demonstrate and maintain a competitive advantage with respect to the design, development and commercialization of *Drug Rescue Variants*. Our competitors may succeed in developing product candidates for the same indications we are pursuing before we do, obtaining regulatory approval for competing products or gaining acceptance of their products within the same markets that we are targeting for our *Drug Rescue Variants*. If, either on our own or in collaboration with a strategic partner, we are not "first to market" with one of our *Drug Rescue Variants*, our competitive position could be compromised because it may be more difficult for us or our partner to obtain marketing approval for our *Drug Rescue Variant* and successfully market it as a second competitor. We expect any *Drug Rescue Variants* that we commercialize, either independently or in collaboration, will compete with products from other companies in the biotechnology and pharmaceutical industries.

Many of our competitors have substantially greater research and development and commercial infrastructures and financial, technical and personnel resources than we have. We will not be able to compete successfully unless we:

- design, develop, produce and commercialize, either on our own or with collaborators, *Drug Rescue Variants* that are superior to other products in development or in the market;
- attract qualified scientific, medical, sales and marketing and commercial personnel or collaborators;
- obtain patent and/or other proprietary protection for our *Drug Rescue Variants*; and
- obtain, either on our own or in collaboration with strategic partners, required regulatory approvals for our *Drug Rescue Variants*.

Established competitors may invest heavily to quickly discover and develop novel compounds that could make our *Drug Rescue Variants* obsolete. In addition, any new product that competes with an approved product must demonstrate compelling advantages in efficacy, convenience, tolerability and safety in order to overcome price competition and to be commercially successful. If we are not able to compete effectively against our current and future competitors, our business will not grow and our financial condition and operations will suffer.

Other companies, academic institutions, government agencies and other public and private research organizations are conducting research, seeking patent protection and establishing collaborative arrangements for research, development and marketing of assays similar to ours and *Drug Rescue Variants* we may produce. These companies and institutions also compete with us in recruiting and retaining qualified scientific and management personnel, obtaining collaborators and licensees, as well as in acquiring technologies complementary to our programs.

As a result of the foregoing, our competitors may develop more effective or more affordable products, or achieve earlier patent protection or product commercialization than we will. Most significantly, competitive products may render any technologies and *Drug Rescue Variants* that we develop obsolete, which would negatively impact our business and ability to sustain operations.

With respect to drug rescue, the licensing and acquisition of proprietary small molecule compounds, even compounds that have failed in development due to heart or liver safety concerns, is a highly competitive area, and a number of more established companies may also pursue strategies to license, acquire, rescue and develop small molecule compounds that we may consider to be *Drug Rescue Candidates*. These established companies have a competitive advantage over us due to their size, cash resources and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to sell or license *Drug Rescue Candidate* rights to us. We have limited experience in negotiating licenses to drug candidates and there can be no assurances that we will be able to acquire or obtain licenses to *Drug Rescue Candidates* in the future, on commercially reasonable terms, if at all, should we elect to pursue such third-party licenses. If we are unable to acquire or obtain licenses to *Drug Rescue Candidates* we seek, our business may be adversely affected.

**Restrictions on research and development involving human embryonic stem cells and political commentary regarding such research and development could impair our ability to conduct or sponsor certain potential collaborative research and development programs and adversely affect the market price of our common stock.**

Some of our most important ongoing and planned research and development programs involve the use of human embryonic stem cells (*hESCs*). Some believe the use of *hESCs* gives rise to ethical and social issues regarding the appropriate use of these cells. Our research related to differentiation of *hESCs* may become the subject of adverse commentary or publicity, which could significantly harm the market price of our common stock. Although now substantially less than in years past, certain political and religious groups in the United States and elsewhere voice opposition to *hESC* technology and practices. We use *hESCs* derived from excess fertilized eggs that have been created for clinical use in *in vitro* fertilization (*IVF*) procedures and have been donated for research purposes with the informed consent of the donors after a successful *IVF* procedure because they are no longer desired or suitable for *IVF*. Certain academic research institutions have adopted policies regarding the ethical use of human embryonic tissue. These policies may have the effect of limiting the scope of future collaborative research opportunities with such institutions, thereby potentially impairing our ability to conduct certain research and development in this field that we believe is necessary to expand the drug rescue capabilities of our technology.

The use of embryonic or fetal tissue in research (including the derivation of *hESCs*) in other countries is regulated by the government, and varies widely from country to country. Government-imposed restrictions with respect to use of *hESCs* in research and development could have a material adverse effect on us by harming our ability to establish critical collaborations, delaying or preventing progress in our research and development, and causing a decrease in the market interest in our stock. These potential ethical concerns do not apply to induced pluripotent stem cells (*iPSCs*), or our plans to pursue pilot nonclinical regenerative medicine studies involving human cells derived from *iPSCs*, because their derivation does not involve the use of embryonic tissues.

**We have assumed that the biological capabilities of induced pluripotent stem cells (*iPSCs*) and *hESCs* are likely to be comparable. If it is discovered that this assumption is incorrect, our exploratory research and development activities focused on potential regenerative medicine applications of our *Human Clinical Trials in a Test Tube* platform could be harmed.**

We use both *hESCs* and *iPSCs* for drug rescue purposes. However, we anticipate that our future exploratory research and development focused on potential regenerative medicine applications of our *Human Clinical Trials in a Test Tube* platform primarily will involve *iPSCs*. With respect to *iPSCs*, we believe scientists are still somewhat uncertain about the clinical utility, life span, and safety of such cells, and whether such cells differ in any clinically significant ways from *hESCs*. If we discover that *iPSCs* will not be useful for whatever reason for potential regenerative medicine applications of our *Human Clinical Trials in a Test Tube* platform, this would negatively affect our ability to explore expansion of our platform, including, in particular, where it would be preferable to use *iPSCs* to reproduce rather than approximate the effects of certain specific genetic variations.

**If we fail to attract and retain senior management and key scientific personnel, we may be unable to successfully produce, develop trials and commercialize our *Drug Rescue Variants*.**

Our success depends in part on our continued ability to attract, retain and motivate highly qualified management and scientific and technical personnel. We are highly dependent upon our senior management, as well as other employees, consultants and scientific collaborators. As of June 1, 2014, we had 10 full-time employees, which may make us more reliant on our individual employees than companies with a greater number of employees. Although none of our key scientific personnel or members of our senior management has informed us that he or she intends to resign or retire in the near future, the loss of services of any of these individuals could delay or prevent the successful development of potential expansions and applications of our *Human Clinical Trials in a Test Tube* platform and our production of *Drug Rescue Variants* or disrupt our administrative functions.

Although we have not historically experienced unique difficulties attracting and retaining qualified employees, we could experience such problems in the future. For example, competition for qualified personnel in the biotechnology and pharmaceuticals field is intense. We will need to hire additional personnel as we expand our research and development activities. We may not be able to attract and retain quality personnel on acceptable terms.

In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development strategy, including our drug rescue strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us.

***We may encounter difficulties in managing our growth and expanding our operations successfully.***

As we seek to advance our proposed *CardioSafe* 3D drug rescue programs, produce and develop *Drug Rescue Variants*, and develop and validate *LiverSafe* 3D, we will need to expand our research and development capabilities or contract with third parties to provide these capabilities for us. As our operations expand, we expect that we will need to manage additional relationships with various strategic partners and other third parties. Future growth will impose significant added responsibilities on members of management. Our future financial performance and our ability to develop and commercialize our product candidates and to compete effectively will depend, in part, on our ability to manage any future growth effectively. To that end, we must be able to manage our research and development efforts effectively and hire, train and integrate additional management, administrative and technical personnel. The hiring, training and integration of new employees may be more difficult, costly and/or time-consuming for us because we have fewer resources than a larger organization. We may not be able to accomplish these tasks, and our failure to accomplish any of them could prevent us from successfully growing the Company.

***If product liability lawsuits are brought against us, we may incur substantial liabilities and may be required to limit commercialization of our product candidates.***

If we produce and develop *Drug Rescue Variants* or regenerative medicine products, either on our own or in collaboration with others, we will face an inherent risk of product liability as a result of the required clinical testing of such product candidates, and will face an even greater risk if we or our collaborators commercialize any such products. For example, we may be sued if any *Drug Rescue Variant* or regenerative medicine product we develop allegedly causes injury or is found to be otherwise unsuitable during product testing, manufacturing, marketing or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability, and a breach of warranties. Claims could also be asserted under state consumer protection acts. If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of our product candidates. Even successful defense would require significant financial and management resources. Regardless of the merits or eventual outcome, liability claims may result in:

- decreased demand for our *Drug Rescue Variants* or other products that we may develop;
- injury to our reputation;
- withdrawal of clinical trial participants;
- costs to defend the related litigation;
- a diversion of management's time and our resources;
- substantial monetary awards to trial participants or patients;
- product recalls, withdrawals or labeling, marketing or promotional restrictions;
- loss of revenue;
- the inability to commercialize our product candidates; and
- a decline in our stock price.

Our inability to obtain and retain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of products we develop. Although we maintain liability insurance, any claim that may be brought against us could result in a court judgment or settlement in an amount that is not covered, in whole or in part, by our insurance or that is in excess of the limits of our insurance coverage. Our insurance policies also have various exclusions, and we may be subject to a product liability claim for which we have no coverage. We will have to pay any amounts awarded by a court or negotiated in a settlement that exceed our coverage limitations or that are not covered by our insurance, and we may not have, or be able to obtain, sufficient capital to pay such amounts.

***To the extent we enter into licensing or collaboration agreements to develop and commercialize our product candidates, including Drug Rescue Variants, our dependence on such relationships may adversely affect our business.***

We may enter into strategic partnerships in the future, including collaborations with other biotechnology or pharmaceutical companies, to enhance and accelerate the development and commercialization of our product candidates. Our strategy to produce, develop and commercialize our product candidates, including any *Drug Rescue Variants*, may depend on our ability to enter into such agreements with third-party collaborators. We face significant competition in seeking appropriate strategic partners. Supporting diligence activities conducted by potential collaborators and negotiating the financial and other terms of a collaboration agreement are long and complex processes with uncertain results. Moreover, we may not be successful in our efforts to establish a strategic partnership or other alternative arrangements for any future product candidates and programs because our research and development pipeline may be insufficient, our product candidates and programs may be deemed to be at too early of a stage of development for collaborative effort and/or third parties may not view our product candidates and programs as having the requisite potential to demonstrate safety and efficacy. Even if we are successful in entering into one or more strategic collaboration agreements with third-parties, such collaborations may involve greater uncertainty for us, as we may have less control over certain aspects of our collaborative programs than we do over our proprietary internal development and commercialization programs. We may determine that continuing a collaborative arrangement under the terms provided is not in our best interest, and we may terminate the collaboration. Our collaborators could also delay or terminate their agreements, and our products subject to collaborative arrangements may never be successfully commercialized.

Further, our future collaborators may develop alternative products or pursue alternative technologies either on their own or in collaboration with others, including our competitors, and the priorities or focus of our collaborators may shift such that our programs receive less attention or resources than we would like, or they may be terminated altogether. Any such actions by our collaborators may adversely affect our business prospects and ability to earn revenues. In addition, we could have disputes with our future collaborators, such as the interpretation of terms in our agreements. Any such disagreements could lead to delays in the development or commercialization of potential products or could result in time-consuming and expensive litigation or arbitration, which may not be resolved in our favor.

Even with respect to certain other products that we intend to commercialize ourselves, we may enter into agreements with collaborators to share in the burden of conducting preclinical studies, clinical trials, manufacturing and marketing our product candidates or products. In addition, our ability to apply our proprietary technologies to develop proprietary compounds will depend on our ability to establish and maintain licensing arrangements or other collaborative arrangements with the holders of proprietary rights to such compounds. We may not be able to establish such arrangements on favorable terms or at all, and our future collaborative arrangements may not be successful.

We cannot provide any assurance that our future collaborations will not terminate development before achievement of revenue-generating milestones or market approval, that our future collaborative arrangements will result in successful development and commercialization of *Drug Rescue Variants*, or that we will derive any revenues from such future arrangements. The failure of any collaborator to conduct, successfully and diligently, their collaborative activities relating to the product candidate we license or sell to them would have a material adverse effect on us. Additionally, to the extent that we are unable to license or sell our *Drug Rescue Variants* to pharmaceutical companies or others, we would require substantial additional capital to undertake development and commercialization activities for any such product candidate on our own, and that substantial additional capital may not be available to us on a timely basis, on reasonable terms, or at all.



***Our and our collaborators' relationships with customers and third-party payors in the United States and elsewhere will be subject to applicable anti-kickback, fraud and abuse and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings.***

Healthcare providers, physicians and third-party payors in the United States and elsewhere will play a primary role in the recommendation and prescription of any product candidates for which we may obtain marketing approval. Our or our future collaborator's arrangements with third-party payors and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we market, sell and distribute our products for which we or they obtain marketing approval. Restrictions under applicable federal, state and foreign healthcare laws and regulations include the following:

- the federal healthcare anti-kickback statute prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service for which payment may be made under federal and state healthcare programs such as Medicare and Medicaid;
- the federal False Claims Act imposes criminal and civil penalties, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government and also includes provisions allowing for private, civil whistleblower or "qui tam" actions;
- the federal Health Insurance Portability and Accountability Act of 1996 (*HIPAA*), as amended by the Health Information Technology for Economic and Clinical Health Act (*HITECH*), imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program. *HIPAA* and *HITECH* also regulate the use and disclosure of identifiable health information by health care providers, health plans and health care clearinghouses, and impose obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of identifiable health information as well as requiring notification of regulatory breaches. *HIPAA* and *HITECH* violations may prompt civil and criminal enforcement actions as well as enforcement by state attorneys general;
- the federal false statements statute prohibits knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement in connection with the delivery of or payment for healthcare benefits, items or services;
- the federal transparency requirements under the Health Care Reform Law requires manufacturers of drugs, devices, biologics and medical supplies to report to the Department of Health and Human Services information related to physician payments and other transfers of value and physician ownership and investment interests;
- analogous state laws and regulations, such as state anti-kickback and false claims laws, may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers, and some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring drug manufacturers to report information related to payments to physicians and other health care providers or marketing expenditures; and
- analogous anti-kickback, fraud and abuse and healthcare laws and regulations in foreign countries.

Efforts to ensure that our and our future collaborators' business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our or their business practices may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our or their operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, exclusion from government funded healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations. If any of the physicians or other providers or entities with whom we or our collaborators expect to do business are found to be not in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

*If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could have a material adverse effect on the success of our business.*

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. Our operations involve the use of hazardous and flammable materials, including chemicals and biological materials. Our operations also produce hazardous waste products. We generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from our use of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties.

Although we maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials, this insurance may not provide adequate coverage against potential liabilities. We do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us in connection with our storage or disposal of biological, hazardous or radioactive materials.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. These current or future laws and regulations may impair our research, development or production efforts. Failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

*To the extent our research and development activities involve using induced pluripotent stem cells, we will be subject to complex and evolving laws and regulations regarding privacy and informed consent. Many of these laws and regulations are subject to change and uncertain interpretation, and could result in claims, changes to our research and development programs and objectives, increased cost of operations or otherwise harm the Company.*

To the extent that we pursue research and development activities involving iPSCs, we will be subject to a variety of laws and regulations in the United States and abroad that involve matters central to such research and development activities, including obligations to seek informed consent from donors for the use of their blood and other tissue to produce, or have produced for us, iPSCs, as well as state and federal laws that protect the privacy of such donors. United States federal and state and foreign laws and regulations are constantly evolving and can be subject to significant change. If we engage in iPSC-related research and development activities in countries other than the United States, we may become subject to foreign laws and regulations relating to human subjects research and other laws and regulations that are often more restrictive than those in the United States. In addition, both the application and interpretation of these laws and regulations are often uncertain, particularly in the rapidly evolving stem cell technology sector in which we operate. These laws and regulations can be costly to comply with and can delay or impede our research and development activities, result in negative publicity, increase our operating costs, require significant management time and attention and subject us to claims or other remedies, including fines or demands that we modify or cease existing business practices.

**Legal, social and ethical concerns surrounding the use of iPSCs, biological materials and genetic information could impair our operations.**

To the extent that our future research and development activities involve the use of iPSCs and the manipulation of human tissue and genetic information, the information we derive from such iPSC-related research and development activities could be used in a variety of applications, which may have underlying legal, social and ethical concerns, including the genetic engineering or modification of human cells, testing for genetic predisposition for certain medical conditions and stem cell banking. Governmental authorities could, for safety, social or other purposes, call for limits on or impose regulations on the use of iPSCs and genetic testing or the manufacture or use of certain biological materials involved in our iPSC-related research and development programs. Such concerns or governmental restrictions could limit our future research and development activities, which could have a material adverse effect on our business, financial condition and results of operations.

**Our human cell-based bioassay systems and human cells we derive from human pluripotent stem cells, although not currently subject to regulation by the FDA or other regulatory agencies as biological products or drugs, could become subject to regulation in the future.**

Our human cells and human cell-based bioassay systems, including *CardioSafe* 3D and *LiverSafe* 3D, are not currently sold, for research or any other purpose, to biotechnology or pharmaceutical companies, government research institutions, academic and nonprofit research institutions, medical research organizations or stem cell banks, and they are not therapeutic procedures. As a result, they are not subject to regulation as biological products or drugs by the FDA or comparable agencies in other countries. However, if, in the future, we seek to include cells we derive from human pluripotent stem cells in therapeutic applications or product candidates, such applications and/or product candidates would be subject to the FDA's pre- and post-market regulations. For example, if we seek to develop and market human cells we produce for use in performing cell therapy or for other regenerative medicine applications, such as tissue engineering or organ replacement, we would first need to obtain FDA pre-market clearance or approval. Obtaining such clearance or approval from the FDA is expensive, time-consuming and uncertain, generally requiring many years to obtain, and requiring detailed and comprehensive scientific and clinical data. Notwithstanding the time and expense, these efforts may not result in FDA approval or clearance. Even if we were to obtain regulatory approval or clearance, it may not be for the uses that we believe are important or commercially attractive.

**We intend to rely on third-party contract manufacturers to produce our product candidate supplies and we intend to rely on such third-party manufacturers to produce commercial supplies of any approved product candidates we develop on our own. Any failure by a third-party manufacturer to produce for us supplies of product candidates we elect to develop on our own may delay or impair our ability to initiate or complete clinical trials, commercialize our product candidates, or continue to sell any products we commercialize.**

We do not currently own or operate any manufacturing facilities, and we lack sufficient internal staff to produce product candidate supplies ourselves. As a result, we plan to work with third-party contract manufacturers to produce sufficient quantities of our product candidates for future preclinical and clinical testing and commercialization. If we are unable to arrange for such a third-party manufacturing source, or fail to do so on commercially reasonable terms or on a timely basis, we or our potential strategic partner may not be able to successfully produce, develop, and market our product candidates or may be delayed in doing so.

Reliance on third-party manufacturers entails risks to which we or our potential collaborators would not be subject if we or they manufactured product candidates ourselves or themselves, including reliance on the third party for regulatory compliance and quality assurance, the possibility of breach of the manufacturing agreement by the third party because of factors beyond our control (including a failure to synthesize and manufacture our product candidates in accordance with our product specifications), the possibility of termination or nonrenewal of the agreement by the third party, based on its own business priorities, at a time that is costly or damaging to us, or misappropriation of proprietary formulas or protocols. We will be, and our potential strategic partners may be, dependent, on the ability of these third-party manufacturers to produce adequate supplies of drug product to support development programs and future commercialization of our product candidates. In addition, the FDA and other regulatory authorities require that all product candidates be manufactured according to cGMP and similar foreign standards. Any failure by our or our collaborators' third-party manufacturers to comply with cGMP or failure to scale up manufacturing processes, including any failure to deliver sufficient quantities of product candidates in a timely manner, could lead to a delay in, or failure to obtain, regulatory approval for trial initiation or marketing of any product candidates we may produce, including *Drug Rescue Variants*. In addition, such failure could be the basis for action by the FDA to withdraw approvals for product candidates previously granted and for other regulatory action, including recall or seizure, fines, imposition of operating restrictions, total or partial suspension of production or injunctions.

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We have limited staffing. We will, and our potential strategic partners may, rely on contract manufacturers to purchase from third-party suppliers the materials necessary to produce our product candidates for required studies. There may be a small number of suppliers for certain capital equipment and materials that we or our collaborators use to manufacture our product candidates. Such suppliers may not sell these materials to our manufacturers at the times we or they need them or on commercially reasonable terms. We will not have any control over the process or timing of the acquisition of these materials by our manufacturers. Although we and our collaborators generally will not begin a required study unless we or they believe a sufficient supply of a product candidate exists to complete the study, any significant delay in the supply of a product candidate or the material components thereof for an ongoing study due to the need to replace a third-party manufacturer could considerably delay completion of the studies, product testing and potential regulatory approval. If we or our manufacturers are unable to purchase these materials after regulatory approval has been obtained for our product candidates, the commercial launch of our product candidates could be delayed or there could be a shortage in supply, which would impair our ability to generate revenues from the sale of our product candidates.

In addition, we or our potential strategic partner may need to optimize the manufacturing processes for a particular drug substance and/or drug product so that certain product candidates may be produced in sufficient quantities of adequate quality, and at an acceptable cost, to support required development activities and commercialization. Contract manufacturers may not be able to adequately demonstrate that an optimized product candidate is comparable to a previously manufactured product candidate which could cause significant delays and increased costs to our or our collaborators' development programs. Our manufacturers may not be able to manufacture our product candidates at a cost or in quantities or in a timely manner necessary to develop and commercialize them. If we successfully commercialize any of our drugs, we may be required to establish or access large-scale commercial manufacturing capabilities. In addition, assuming that our drug development pipeline increases and matures, we will have a greater need for clinical trial and commercial manufacturing capacity. To meet our projected needs for commercial manufacturing, third party manufactures with whom we work will need to increase their scale of production or we will need to secure alternate suppliers.

***If, in the future, we are unable to enter into licensing or collaboration agreements for the sales, marketing and distribution of our Drug Rescue Variants and other product candidates, such as AV-101, we may not be successful in commercializing our Drug Rescue Variants and other product candidates.***

We currently have a relatively small number of employees and do not have a sales or marketing infrastructure, and we, including our executive officers, do not have any significant sales, marketing or distribution experience. We will be opportunistic in seeking to collaborate with others to develop and commercialize *Drug Rescue Variants* and future products if and when they are developed and approved. If we enter into arrangements with third parties to perform sales, marketing and distribution services for our products, the resulting revenues or the profitability from these revenues to us are likely to be lower than if we had sold, marketed and distributed our products ourselves. In addition, we may not be successful in entering into arrangements with third parties to sell, market and distribute our *Drug Rescue Variants* or other product candidates or may be unable to do so on terms that are favorable to us. We likely will have little control over such third parties, and any of these third parties may fail to devote the necessary resources and attention to sell, market and distribute our products effectively. If we do not establish sales, marketing and distribution capabilities successfully, in collaboration with third parties, we will not be successful in commercializing our product candidates.

***Our business is subject to the risks of earthquakes, fire, floods and other natural catastrophic events, and to interruption by man-made problems such as computer viruses or terrorism.***

Our corporate headquarters are located in the San Francisco Bay Area, a region known for seismic activity. A significant natural disaster, such as an earthquake, fire or a flood, could harm our business. In addition, our servers are vulnerable to computer viruses, break-ins and similar disruptions from unauthorized tampering with our computer systems. In addition, acts of terrorism or war could cause disruptions in our business or the economy as a whole.

***We incur significant costs to ensure compliance with corporate governance, federal securities law and accounting requirements.***

Since becoming a public company by means of a strategic reverse merger in 2011, we have been subject to the reporting requirements of the Securities Exchange Act of 1934, as amended (*Exchange Act*), which requires that we file annual, quarterly and current reports with respect to our business and financial condition, and the rules and regulations implemented by the Securities and Exchange Commission (*SEC*), the Sarbanes-Oxley Act of 2002, the Dodd-Frank Act, and the Public Company Accounting Oversight Board, each of which imposes additional reporting and other obligations on public companies. We have incurred and will continue to incur significant costs to comply with these public company reporting requirements, including accounting and related audit costs, legal costs to comply with corporate governance requirements and other costs of operating as a public company. These legal and financial compliance costs will continue to require us to divert a significant amount of money that we could otherwise use to achieve our research and development and other strategic objectives.

The filing and internal control reporting requirements imposed by federal securities laws, rules and regulations are rigorous and we may not be able to continue to meet them, resulting in a possible decline in the price of our common stock and our inability to obtain future financing. Certain of these requirements may require us to carry out activities we have not done previously and complying with such requirements may divert management's attention from other business concerns, which could have a material adverse effect on our business, results of operations, financial condition and cash flows. Any failure to adequately comply with federal securities laws, rules or regulations could subject us to fines or regulatory actions, which may materially adversely affect our business, results of operations and financial condition.

In addition, changing laws, regulations and standards relating to corporate governance and public disclosure are creating uncertainty for public companies, increasing legal and financial compliance costs and making some activities more time consuming. These laws, regulations and standards are subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. We will continue to invest resources to comply with evolving laws, regulations and standards, however this investment may result in increased general and administrative expenses and a diversion of management's time and attention from revenue-generating activities to compliance activities. If our efforts to comply with new laws, regulations and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to their application and practice, regulatory authorities may initiate legal proceedings against us and our business may be adversely affected.

**Risks Related to Production, Development, and Regulatory Approval of Product Candidates**

*Even if we are able to begin clinical trials for a Drug Rescue Variant, we may encounter considerable delays and/or expend considerable resources without producing a marketable product capable of generating revenue.*

We may never generate revenues from sales of a *Drug Rescue Variant* or any other product because of a variety of risks inherent in our business, including the following:

- clinical trials may not demonstrate the safety and efficacy of any *Drug Rescue Variant*, other new drug candidate, biological candidate or regenerative medicine product candidate;
- completion of nonclinical or clinical trials may be delayed, or costs of nonclinical or clinical trials may exceed anticipated amounts;
- we may not be able to obtain regulatory approval of any *Drug Rescue Variant*, other new drug candidate, biological candidate or regenerative medicine product candidate; or we may experience delays in obtaining any such approval;
- we may not be able to manufacture, or have manufactured for us, *Drug Rescue Variants*, other new drug candidates, biological candidates or regenerative medicine product candidates economically, timely and on a commercial scale;
- we and any licensees of ours may not be able to successfully market *Drug Rescue Variants*, other new drug candidates, biological candidates or regenerative medicine product candidates;
- physicians may not prescribe our products, or patients or third party payors may not accept our *Drug Rescue Variants*, other drug candidates, biological candidates or regenerative medicine product candidates;
- others may have proprietary rights which prevent us from marketing our *Drug Rescue Variants*, other new drug candidates, biological candidates or regenerative medicine product candidates; and
- competitors may sell similar, superior or lower-cost products.

In the event we are able to begin a clinical trial of a *Drug Rescue Variant*, our or our collaborator's future clinical trials may be delayed or halted for many reasons, including:

- delays or failure reaching agreement on acceptable terms with prospective contract manufacturing organizations (*CMOs*), contract research organizations (*CROs*), and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- failure of third-party contractors, such as CROs and CMOs, or investigators to comply with regulatory requirements or otherwise meet their contractual obligations in a timely manner;
- delays or failure in obtaining the necessary approvals from regulators or institutional review boards (IRBs) in order to commence a clinical trial at a prospective trial site;
- inability to manufacture, or obtain from third parties, a supply of drug product sufficient to complete preclinical studies and clinical trials;
- the FDA requiring alterations to study designs, preclinical strategy or manufacturing plans;
- delays in patient enrollment, and variability in the number and types of patients available for clinical trials, or high drop-out rates of patients;
- clinical trial sites deviating from trial protocols or dropping out of a trial and/or the inability to add new clinical trial sites;
- difficulty in maintaining contact with patients after treatment, resulting in incomplete data;
- poor effectiveness of our product candidates during clinical trials;
- safety issues, including serious adverse events associated with our product candidates and patients' exposure to unacceptable health risks;
- receipt by a competitor of marketing approval for a product targeting an indication that one of our product candidates targets, such that we are not "first to market" with our product candidate;
- governmental or regulatory delays and changes in regulatory requirements, policy and guidelines; or
- varying interpretations of data by the FDA and similar foreign regulatory agencies.

We or our collaborator could also encounter delays if a clinical trial is suspended or terminated by us, our collaborator, the IRBs of the institutions in which a trial is being conducted, by the Data Safety Monitoring Board (*DSMB*) for a trial, or by the FDA or other regulatory authorities. Such authorities may suspend or terminate a clinical trial due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or clinical protocols, inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a drug, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial.

Moreover, if we or our collaborators are able to complete a clinical trial of a product candidate, the results of such trial may not be adequate to support marketing approval. For any such trial, if the FDA disagrees with the choice of primary endpoint or the results for the primary endpoint are not robust or significant relative to control, are subject to confounding factors, or are not adequately supported by other study endpoints, including overall survival or complete response rate, the FDA may refuse to approve a Biologics License Application (*BLA*) or New Drug Application (*NDA*). The FDA may require additional clinical trials as a condition for approving our product candidates.

Clinical testing involves the administration of the new drug or biological candidate to healthy human volunteers or to patients under the supervision of a qualified principal investigator, usually a physician, pursuant to an FDA-reviewed protocol. Each clinical study is conducted under the auspices of an institutional review board (*IRB*) at each of the institutions at which the study will be conducted. A clinical plan, or "protocol," accompanied by the approval of an IRB, must be submitted to the FDA as part of the IND application prior to commencement of each clinical trial. Human clinical trials are conducted typically in three sequential phases. Phase I trials primarily consist of testing the product's safety in a small number of patients or healthy volunteers. In Phase II trials, the safety and efficacy of the biological candidate is evaluated in a specific patient population. Phase III trials typically involve additional testing for safety and clinical efficacy in an expanded patient population at geographically dispersed sites. The FDA may order the temporary or permanent discontinuance of a nonclinical or clinical trial at any time for a variety of reasons, particularly if safety concerns exist.

Our or our collaborator's future clinical trials can be delayed or halted for many reasons, including:

- delays or failure reaching agreement on acceptable terms with prospective contract manufacturing organizations (*CMOs*), contract research organizations (*CROs*), and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- failure of third-party contractors, such as CROs and CMOs, or investigators to comply with regulatory requirements or otherwise meet their contractual obligations in a timely manner;
- delays or failure in obtaining the necessary approvals from regulators or IRBs in order to commence a clinical trial at a prospective trial site;
- inability to manufacture, or obtain from third parties, a supply of drug product sufficient to complete preclinical studies and clinical trials;
- the FDA requiring alterations to study designs, preclinical strategy or manufacturing plans;
- delays in patient enrollment, and variability in the number and types of patients available for clinical trials, or high drop-out rates of patients;
- clinical trial sites deviating from trial protocols or dropping out of a trial and/or the inability to add new clinical trial sites;
- difficulty in maintaining contact with patients after treatment, resulting in incomplete data;
- poor effectiveness of our product candidates during clinical trials;
- safety issues, including serious adverse events associated with our product candidates and patients' exposure to unacceptable health risks;
- receipt by a competitor of marketing approval for a product targeting an indication that one of our product candidates targets, such that we are not "first to market" with our product candidate;
- governmental or regulatory delays and changes in regulatory requirements, policy and guidelines; or
- varying interpretations of data by the FDA and similar foreign regulatory agencies.

We or our collaborator could also encounter delays if a clinical trial is suspended or terminated by us, our collaborator, the IRBs of the institutions in which a trial is being conducted, by the Data Safety Monitoring Board (*DSMB*) for a trial, or by the FDA or other regulatory authorities. Such authorities may suspend or terminate a clinical trial due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or clinical protocols, inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a drug, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial.

Moreover, if we or our collaborators are able to complete a clinical trial of a product candidate, the results of such trial may not be adequate to support marketing approval. For any such trial, if the FDA disagrees with the choice of primary endpoint or the results for the primary endpoint are not robust or significant relative to control, are subject to confounding factors, or are not adequately supported by other study endpoints, including overall survival or complete response rate, the FDA may refuse to approve a BLA or NDA. The FDA may require additional clinical trials as a condition for approving our product candidates.



If we or our collaborator experience delays in the completion of, or termination of, any clinical trial of our product candidates, the commercial prospects of our product candidates will be harmed, and our ability to commence product sales and generate product revenues from any of our product candidates will be delayed. In addition, any delays in completing our clinical trials will increase our costs and slow our product candidate development and approval process. Delays in completing clinical trials could also allow our competitors to obtain marketing approval before we do or shorten the patent protection period during which we may have the exclusive right to commercialize our product candidates. Any of these occurrences may significantly harm our business, financial condition and prospects. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our product candidates.

***Results of earlier clinical trials may not be predictive of the results of later-stage clinical trials.***

The results of preclinical studies and early clinical trials of product candidates may not be predictive of the results of later-stage clinical trials. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy results despite having progressed through preclinical studies and initial clinical trials. Many companies in the biopharmaceutical industry have suffered significant setbacks in advanced clinical trials due to adverse safety profiles or lack of efficacy, notwithstanding promising results in earlier studies. Similarly, our future clinical trial results may not be successful for these or other reasons.

This drug candidate development risk is heightened by any changes in planned clinical trials compared to completed clinical trials. As product candidates are developed through preclinical to early and late stage clinical trials towards approval and commercialization, it is customary that various aspects of the development program, such as manufacturing and methods of administration, are altered along the way in an effort to optimize processes and results. While these types of changes are common and are intended to optimize the product candidates for later stage clinical trials, approval and commercialization, such changes do carry the risk that they will not achieve these intended objectives.

For example, the results of planned clinical trials may be adversely affected if we or our collaborator seek to optimize and scale-up production of a product candidate. In such case, we will need to demonstrate comparability between the newly manufactured drug substance and/or drug product relative to the previously manufactured drug substance and/or drug product. Demonstrating comparability may cause us to incur additional costs or delay initiation or completion of our clinical trials, including the need to initiate a dose escalation study and, if unsuccessful, could require us to complete additional preclinical or clinical studies of our product candidates.

***If we or our potential strategic partners experience delays in the enrollment of patients in clinical trials involving our product candidates, our receipt of necessary regulatory approvals could be delayed or prevented.***

We or our potential strategic partners may not be able to initiate or continue clinical trials for our product candidates if we or they are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or other regulatory authorities. Patient enrollment, a significant factor in the timing of clinical trials, is affected by many factors including the size and nature of the patient population, the proximity of patients to clinical sites, the eligibility criteria for the trial, the design of the clinical trial, competing clinical trials and clinicians' and patients' perceptions as to the potential advantages of the drug being studied in relation to other available therapies, including any new drugs that may be approved for the indications we or our collaborators may be investigating. If we or they fail to enroll and maintain the number of patients for which the clinical trial was designed, the statistical power of that clinical trial may be reduced, which would make it harder to demonstrate that the product candidate being tested is safe and effective. Additionally, enrollment delays in clinical trials may result in increased development costs for our product candidates, which would cause the value of our common stock to decline and limit our ability to obtain additional financing. Our inability to enroll a sufficient number of patients for any of our current or future clinical trials would result in significant delays or may require us to abandon one or more clinical trials, and, therefore, product candidates, altogether.

*Even if we receive regulatory approval for any of our Drug Rescue Variants or other product candidates, we and/or our potential strategic partners will be subject to ongoing FDA obligations and continued regulatory review, which may result in significant additional expense. Additionally, our product candidates, if approved, could be subject to labeling and other restrictions and market withdrawal and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our products.*

Any regulatory approvals that we or our potential strategic partners receive for our *Drug Rescue Variants* or other product candidates may also be subject to limitations on the approved indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing testing, including Phase 4 clinical trials, and surveillance to monitor the safety and efficacy of the product candidate, all of which could adversely affect the product's commercial potential and our revenues. In addition, if the FDA approves any of our product candidates, the manufacturing processes, testing, packaging, labeling, storage, distribution, field alert or biological product deviation reporting, adverse event reporting, advertising, promotion and recordkeeping for the product will be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports, as well as continued compliance with cGMP for commercial manufacturing and good clinical practices, or GCP, for any clinical trials that we conduct post-approval. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on the marketing or manufacturing of the product, withdrawal of the product from the market, or voluntary or mandatory product recalls;
- warning letters or holds on clinical trials;
- refusal by the FDA to approve pending applications or supplements to approved applications filed by us or our strategic partners, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; and
- injunctions, fines or the imposition of other civil or criminal penalties.

#### **Risks Related to Our Financial Position and Capital Requirements**

*We have incurred significant net losses since inception and anticipate that we will continue to incur substantial operating losses for the foreseeable future. We may never achieve or sustain profitability, which would depress the market price of our common stock, and could cause you to lose all or a part of your investment.*

We have incurred significant net losses in each fiscal year since our inception, including net losses of \$3.0 million and \$12.9 million during the fiscal years ending March 31, 2014 and 2013, respectively. As of March 31, 2014, we had an accumulated deficit of \$70.6 million. We do not know whether or when we will become profitable. To date, although we have generated approximately \$16.4 million in revenues, we have not commercialized any products or generated any revenues from product sales. Our losses have resulted principally from costs incurred in our research and development programs and from general and administrative expenses. We anticipate that our operating losses will substantially increase over the next several years as we execute our plan to expand our drug rescue, stem cell technology research and development, drug development and potential commercialization activities. Additionally, we expect that our general and administrative expenses will increase in the event we achieve our goal of obtaining a listing on a national securities exchange. The net losses we incur may fluctuate from quarter to quarter.

If we do not successfully develop, license, sell or obtain regulatory approval for our future product candidates and effectively manufacture, market and sell, or collaborate to accomplish such activities, any product candidates that are approved, we may never generate revenues from product sales, and even if we do generate product sales revenues, we may never achieve or sustain profitability on a quarterly or annual basis. Our failure to become and remain profitable would depress the market price of our common stock and could impair our ability to raise capital, expand our business, diversify our product offerings or continue our operations. A decline in the market price of our common stock also could cause you to lose all or a part of your investment.

*We will require substantial additional financing to achieve our goals, and a failure to obtain this necessary capital when needed could force us to delay, limit, reduce or terminate our product development or commercialization efforts.*

Since our inception, most of our resources have been dedicated to research and development of the drug rescue capabilities of our human pluripotent stem cell technology. In particular, we have expended substantial resources developing *CardioSafe* 3D and *LiverSafe* 3D, and we will continue to expend substantial resources for the foreseeable future developing *LiverSafe* 3D and *CardioSafe* 3D *Drug Rescue Variants*. These expenditures will include costs associated with general and administrative costs, facilities costs, research and development, acquiring new technologies, manufacturing product candidates, conducting preclinical experiments and clinical trials and obtaining regulatory approvals, as well as commercializing any products approved for sale. Furthermore, we expect to incur additional costs associated with operating as a public company.

We have no current source of revenue to sustain our present activities, and we do not expect to generate revenue until, and unless, we out-license a *Drug Rescue Variant* and/or AV-101 to a third party, obtain approval from the FDA or other regulatory authorities and successfully commercialize, on our own or through a future collaboration, one or more of our compounds. As the outcome of our proposed drug rescue and AV-101 development activities and future anticipated clinical trials is highly uncertain, we cannot reasonably estimate the actual amounts necessary to successfully complete the development and commercialization of our product candidates, on our own or in collaboration with others. In addition, other unanticipated costs may arise. As a result of these and other factors, we will need to seek additional capital in the near term to meet our future operating requirements, and may seek additional capital due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans.

Our future capital requirements depend on many factors, including:

- the number and characteristics of the product candidates we pursue, including *Drug Rescue Candidates*;
- the scope, progress, results and costs of researching and developing our product candidates, and conducting preclinical and clinical studies;
- the timing of, and the costs involved in, obtaining regulatory approvals for our product candidates;
- the cost of commercialization activities if any of our product candidates are approved for sale, including marketing, sales and distribution costs;
- the cost of manufacturing our product candidates and any products we successfully commercialize;
- our ability to establish and maintain strategic partnerships, licensing or other arrangements and the financial terms of such agreements;
- market acceptance of our products;
- the effect of competing technological and market developments;
- our ability to obtain government funding for our programs;
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patent claims necessary to preserve our freedom to operate in the stem cell industry, including litigation costs associated with any claims that we infringe third-party patents or violate other intellectual property rights and the outcome of such litigation;
- the timing, receipt and amount of potential future licensee fees, milestone payments, and sales of, or royalties on, our future products, if any; and
- the extent to which we acquire or invest in businesses, products and technologies, although we currently have no commitments or agreements relating to any of these types of transactions.

Additional funds may not be available when we need them, on terms that are acceptable to us, or at all. If adequate funds are not available to us on a timely basis, we may be required to delay, limit, reduce or terminate drug rescue programs, preclinical studies, clinical trials or other research and development activities for one or more of our product candidates, or cease or reduce our operating activities and/or sell or license to third parties some or all of our intellectual property, any of which could harm our operating results.

***Raising additional capital will cause dilution to our existing stockholders, and may restrict our operations or require us to relinquish rights to our technologies or product candidates.***

We will need to seek additional capital through a combination of private and public equity offerings, debt financings, strategic partnerships and alliances and licensing arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interests of existing stockholders will be diluted, and the terms of the new capital may include liquidation or other preferences that adversely affect existing stockholder rights. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take certain actions, such as incurring debt, making capital expenditures or declaring dividends. If we raise additional funds through strategic partnerships and alliances and licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies or product candidates, or grant licenses on terms that are not favorable to us. If we are unable to raise additional funds through equity or debt financing when needed, we may be required to delay, limit, reduce or terminate our product development or commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

***Some of our programs have been partially supported by government grants, which may not be available to us in the future.***

Since inception, we have received substantial funds under grant award programs funded by state and federal governmental agencies, such as the NIH, the NIH's National Institute of Neurological Disease and Stroke and the California Institute for Regenerative Medicine. To fund a portion of our future research and development programs, we may apply for additional grant funding from such or similar governmental organizations. However, funding by these governmental organizations may be significantly reduced or eliminated in the future for a number of reasons. For example, some programs are subject to a yearly appropriations process in Congress. In addition, we may not receive funds under future grants because of budgeting constraints of the agency administering the program. Therefore, we cannot assure you that we will receive any future grant funding from any government organization or otherwise. A restriction on the government funding available to us could reduce the resources that we would be able to devote to future research and development efforts. Such a reduction could delay the introduction of new products and hurt our competitive position.

***Our independent auditors have expressed substantial doubt about our ability to continue as a going concern.***

Our consolidated financial statements for the year ended March 31, 2014 included in Item 8 of this Annual Report on Form 10-K have been prepared assuming we will continue to operate as a going concern. However, due to our ongoing operating losses and our accumulated deficit, there is doubt about our ability to continue as a going concern. Because we continue to experience net operating losses, our ability to continue as a going concern is subject to our ability to generate a profit and/or obtain necessary funding from outside sources, including obtaining additional funding from the sale of our securities or obtaining loans and grants from financial institutions and/or government agencies where possible. Our continued net operating losses increase the difficulty in completing such sales or securing alternative sources of funding, and there can be no assurances that we will be able to obtain such funding on favorable terms or at all. If we are unable to obtain sufficient financing from the sale of its securities or from alternative sources, it may be required to reduce, defer, or discontinue certain of its research and development activities or it may not be able to continue as a going concern.

***Our ability to use net operating losses to offset future taxable income is subject to certain limitations.***

If we do not generate sufficient taxable income we may not be able to use a material portion, or any portion, of our existing net operating losses (*NOLs*). Furthermore, our existing *NOLs* may be subject to limitations under Section 382 of the Internal Revenue Code of 1986, as amended, which in general provides that a corporation that undergoes an "ownership change" is limited in its ability to utilize its pre-change *NOLs* to offset future taxable income. Our existing *NOLs* are subject to limitations arising from previous ownership changes, and if we undergo an ownership change, in connection with a future equity-based financing, series of equity-based financings or otherwise, our ability to utilize *NOLs* could be further limited by Section 382 of the Internal Revenue Code. Future changes in our stock ownership, some of which are outside of our control, could result in an ownership change under Section 382 of the Internal Revenue Code.

#### **Risks Related to Intellectual Property**

***We utilize certain technologies that are licensed to us, including key aspects of our Human Clinical Trials in a Test Tube platform. If the licensors terminate the licenses or fail to maintain or enforce the underlying patents, our competitive position and market share will be harmed, and our business could be adversely affected.***

We currently use certain licensed technologies to produce cells that are material to our research and development programs, including our drug rescue programs, and we may enter into additional license agreements in the future. Our rights to use such licensed technologies are subject to the negotiation of, continuation of and compliance with the terms of the applicable licenses, including payment of any royalties and diligence, insurance, indemnification and other obligations. If a licensor believes that we have failed to meet our obligations under a license agreement for non-payment of license fees, non-reimbursement of patent expenses, or otherwise, the licensor could seek to limit or terminate our license rights, which could lead to costly and time-consuming litigation and, potentially, a loss of the licensed rights. During the period of any such litigation, our ability to carry out the development and commercialization of potential products could be significantly and negatively affected.

Our license rights are further subject to the validity of the owner's intellectual property rights. As such, we are dependent on our licensors to defend the viability of these patents and patent applications. We cannot be certain that drafting and/or prosecution of the licensed patents and patent applications by the licensors have been or will be conducted in compliance with applicable laws and regulations or will result in valid and enforceable patents and other intellectual property rights. Legal action could be initiated by or against the owners of the intellectual property that we license. Even if we are not a party to these legal actions, an adverse outcome could harm our business because it might prevent these other companies or institutions from continuing to license intellectual property that we may need to operate our business. In some cases, we do not control the prosecution, maintenance or filing of the patents to which we hold licenses, or the enforcement of these patents against third parties.

Certain of our license agreements are subject to termination by the licensor in specific circumstances, including non-payment of license fees, royalties and patent-related expenses. Any such termination of these licenses could prevent us from producing cells for our research and development programs and future commercial activities, including selling or marketing products. Because of the complexity of our human pluripotent stem cell technology and the patents we have licensed, determining the scope of the license and related royalty obligation can be difficult and can lead to disputes between us and the licensor. An unfavorable resolution of such a dispute could lead to an increase in the royalties payable pursuant to the license. If a licensor believed we were not paying the royalties or other amounts due under the license or were otherwise not in compliance with the terms of the license, the licensor might attempt to revoke the license. If our license rights were restricted or ultimately lost, our ability to continue our business based on the affected technology would be severely adversely affected.

We may engage in discussions regarding possible commercial, licensing and cross-licensing agreements with third parties from time to time. There can be no assurance that these discussions will lead to the execution of commercial license or cross-license agreements or that such agreements will be on terms that are favorable to us. If these discussions are successful, we could be obligated to pay license fees and royalties to such third parties. If these discussions do not lead to the execution of mutually acceptable agreements, we may be limited or prevented from producing and selling our existing products and developing new products. One or more of the parties involved in such discussions could resort to litigation to protect or enforce its patents and proprietary rights or to determine the scope, coverage and validity of the proprietary rights of others. In addition, if we enter into cross-licensing agreements, there is no assurance that we will be able to effectively compete against others who are licensed under our patents.

*If we seek to leverage prior discovery and development of Drug Rescue Candidates under in-license arrangements with academic laboratories, biotechnology companies, the NIH, pharmaceutical companies or other third parties, it is uncertain what ownership rights, if any, we will obtain over intellectual property we derive from such licenses to Drug Rescue Variants we may generate or develop in connection with any such third-party licenses.*

If, instead of identifying *Drug Rescue Candidates* based on information available to us in the public domain, we seek to in-license *Drug Rescue Candidates* from biotechnology, medicinal chemistry and pharmaceutical companies, academic, governmental and nonprofit research institutions, including the NIH, or other third-parties, there can be no assurances that we will obtain material ownership or economic participation rights over intellectual property we may derive from such licenses or similar rights to the *Drug Rescue Variants* we may generate and develop. If we are unable to obtain ownership or substantial economic participation rights over intellectual property related to *Drug Rescue Variants* we generate, our business may be adversely affected.

*Our ability to protect our intellectual property and proprietary technology through patents and other means is uncertain, and we could be unsuccessful in obtaining adequate patent protection for one or more of our product candidates.*

Our commercial success will depend in part on our ability to protect our intellectual property and proprietary technologies. We rely on patents, where appropriate and available, as well as a combination of copyright, trade secret and trademark laws, license agreements and nondisclosure, confidentiality and other contractual restrictions to protect our proprietary technology. However, these legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep any competitive advantage. Pending patent applications of ours or our licensors may not issue as patents or may not issue in a form that will be sufficient to protect our proprietary technology and gain or maintain our competitive advantage. Any patents we have obtained or may obtain in the future, or the rights we have licensed, may be subject to re-examination, reissue, opposition or other administrative proceeding, or may be challenged in litigation, and such challenges could result in a determination that the patent is invalid or unenforceable. In addition, competitors may be able to design alternative methods or products that avoid infringement of these patents or technologies. To the extent our intellectual property, including licensed intellectual property, offers inadequate protection, or is found to be invalid or unenforceable, we are exposed to a greater risk of direct competition. If our intellectual property does not provide adequate protection against our competitors' products, our competitive position could be adversely affected, as could our business. Both the patent application process and the process of managing patent disputes can be time consuming and expensive.

The patent positions of companies in the life sciences industry can be highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. A number of life sciences, biopharmaceutical and other companies, universities and research institutions have filed patent applications or have been issued patents relating to stem cells, use of stem cells and other modified cells to treat disease, disorder or injury, and other technologies potentially relevant to or required by our existing and planned products. We cannot be certain that patents we have filed or may file in the future will be issued or granted, or that issued or granted patents will not later be found to be invalid and/or unenforceable. The standards applied by the United States Patent and Trademark Office (*US PTO*) and foreign patent offices in granting patents are not always applied uniformly or predictably. For example, there is no uniform worldwide policy regarding patentable subject matter or the scope of claims allowable in biotechnology and pharmaceutical patents. Consequently, patents may not issue from our pending or future patent applications. As such, we do not know the degree of future protection that we will have on certain of our proprietary products and technology.

***Our patents and patent applications may not be sufficient to protect our products, product candidates and technologies from commercial competition. Our inability to obtain adequate patent protection for our product candidates or platform technology could adversely affect our business.***

Publication of discoveries in scientific or patent literature tends to lag behind actual discoveries by at least several months and sometimes several years. Therefore, the persons or entities that we or our licensors name as inventors in our patents and patent applications may not have been the first to invent the inventions disclosed in the patent applications or patents, or the first to file patent applications for these inventions. As a result, we may not be able to obtain patents for discoveries that we otherwise would consider patentable and that we consider to be extremely significant to our future success.

Where several parties seek U.S. patent protection for the same technology, the US PTO may declare an interference proceeding in order to ascertain the party to which the patent should be issued. Patent interferences are typically complex, highly contested legal proceedings, subject to appeal. They are usually expensive and prolonged, and can cause significant delay in the issuance of patents. Moreover, parties that receive an adverse decision in interference can lose patent rights. Our pending patent applications, or our issued patents, may be drawn into interference proceedings, which may delay or prevent the issuance of patents or result in the loss of issued patent rights. If more groups become engaged in scientific research related to hESCs, the number of patent filings by such groups and therefore the risk of our patents or applications being drawn into interference proceedings may increase. The interference process can also be used to challenge a patent that has been issued to another party.

Outside of the U.S., certain jurisdictions, such as Europe, Japan, New Zealand and Australia, permit oppositions to be filed against the granting of patents. Because we may seek to develop and commercialize our product candidates internationally, securing both proprietary protection and freedom to operate outside of the U.S. is important to our business. In addition, the European Patent Convention prohibits the granting of European patents for inventions that concern "uses of human embryos for industrial or commercial purposes". The European Patent Office is presently interpreting this prohibition broadly, and is applying it to reject patent claims that pertain to hESCs. However, this broad interpretation is being challenged through the European Patent Office appeals system. As a result, we do not yet know whether or to what extent we will be able to obtain European patent protection for our proprietary hESC-based technology and systems.

Patent opposition proceedings are not currently available in the U.S. patent system, but legislation is pending to introduce them. However, issued U.S. patents can be re-examined by the US PTO at the request of a third party. Patents owned or licensed by us may therefore be subject to re-examination. As in any legal proceeding, the outcome of patent re-examinations is uncertain, and a decision adverse to our interests could result in the loss of valuable patent rights.

Successful challenges to our patents through interference, opposition or re-examination proceedings could result in a loss of patent rights in the relevant jurisdiction(s). As more groups become engaged in scientific research and product development areas of hESCs, the risk of our patents being challenged through patent interferences, oppositions, re-examinations or other means will likely increase. If we institute such proceedings against the patents of other parties and we are unsuccessful, we may be subject to litigation, or otherwise prevented from commercializing potential products in the relevant jurisdiction, or may be required to obtain licenses to those patents or develop or obtain alternative technologies, any of which could harm our business.

Furthermore, if such challenges to our patent rights are not resolved promptly in our favor, our existing business relationships may be jeopardized and we could be delayed or prevented from entering into new collaborations or from commercializing certain products, which could materially harm our business.

***Issued patents covering one or more of our product candidates or technologies could be found invalid or unenforceable if challenged in court.***

If we were to initiate legal proceedings against a third party to enforce a patent covering one of our product candidates or technologies, the defendant could counterclaim that our patent is invalid and/or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, for example, lack of novelty, obviousness or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the US PTO, or made a misleading statement, during prosecution. The outcome following legal assertions of invalidity and unenforceability during patent litigation is unpredictable. With respect to the patent validity, we cannot be certain, for example, that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on one or more of our products or certain aspects of our platform technology, *Human Clinical Trials in a Test Tube*. Such a loss of patent protection could have a material adverse impact on our business.

***Claims that any of our product candidates, including our Human Clinical Trials in a Test Tube, or, if commercialized, the sale or use of our products infringe the patent rights of third parties could result in costly litigation or could require substantial time and money to resolve, even if litigation is avoided.***

We cannot guarantee that our product candidates, the use of our product candidates, or our platform technology, do not or will not infringe third party patents. Third parties might allege that we are infringing their patent rights or that we have misappropriated their trade secrets. Such third parties might resort to litigation against us. The basis of such litigation could be existing patents or patents that issue in the future. Our failure to successfully defend against any claims that our product candidates or platform technology infringe the rights of third parties could also adversely affect our business. Failure to obtain any required licenses could restrict our ability to commercialize our products in certain territories or subject us to patent infringement litigation, which could result in us having to cease commercialization of our products and subject us to money damages in such territories.

It is also possible that we may fail to identify relevant patents or applications. For example, applications filed before November 29, 2000 and certain applications filed after that date that will not be filed outside the United States remain confidential until patents issue. Patent applications in the United States and elsewhere are published approximately 18 months after the earliest filing for which priority is claimed, with such earliest filing date being commonly referred to as the priority date. Therefore, patent applications covering our products or platform technology could have been filed by others without our knowledge. Additionally, pending patent applications which have been published can, subject to certain limitations, be later amended in a manner that could cover our platform technologies, our products or the use of our products.

To avoid or settle potential claims with respect to any patent rights of third parties, we may choose or be required to seek a license from a third party and be required to pay license fees or royalties or both. These licenses may not be available on acceptable terms, or at all. Even if we or any future strategic partners were able to obtain a license, the rights may be nonexclusive, which could result in our competitors gaining access to the same intellectual property. Ultimately, we could be prevented from commercializing one or more of our products, or be forced to cease some aspect of our business operations, if, as a result of actual or threatened patent infringement claims, we are unable to enter into licenses on acceptable terms. This could harm our business significantly.

Defending against claims of patent infringement or misappropriation of trade secrets could be costly and time consuming, regardless of the outcome. Even if we were to ultimately prevail, or to settle at an early stage, such litigation could burden us with substantial unanticipated costs. In addition, litigation or threatened litigation could result in significant demands on the time and attention of our management team, distracting them from the pursuit of other business.



***Intellectual property litigation may lead to unfavorable publicity that harms our reputation, and could result in unfavorable outcomes that could limit our research and development activities and/or our ability to commercialize certain products.***

During the course of any patent litigation, there could be public announcements of the results of hearings, rulings on motions, and other interim proceedings in the litigation. If securities analysts or investors regard these announcements as negative, the perceived value of our products, programs, or intellectual property could be diminished. Moreover, if third parties successfully assert intellectual property rights against us, we might be barred from using certain aspects of our platform technology, or barred from developing and commercializing certain products. Prohibitions against using certain technologies, or prohibitions against commercializing certain products, could be imposed by a court or by a settlement agreement between us and a plaintiff. In addition, if we are unsuccessful in defending against allegations of patent infringement or misappropriation of trade secrets, we may be forced to pay substantial damage awards to the plaintiff. There is inevitable uncertainty in any litigation, including intellectual property litigation. There can be no assurance that we would prevail in any intellectual property litigation, even if the case against us is weak or flawed. If litigation leads to an outcome unfavorable to us, we may be required to obtain a license from the patent owner to continue our research and development programs or to market our product(s). It is possible that the necessary license will not be available to us on commercially acceptable terms, or at all. This could limit our research and development activities, our ability to commercialize certain products, or both.

Most of our competitors are larger than we are and have substantially greater resources. They are, therefore, likely to be able to sustain the costs of complex patent litigation longer than we could. In addition, the uncertainties associated with litigation could have a material adverse effect on our ability to raise the funds necessary to continue our internal research programs, conduct clinical trials, continue to in-license needed technology, or enter into strategic partnerships that would help us bring our product candidates to market.

In addition, any future patent litigation, interference or other administrative proceedings will result in additional expense and distraction of our personnel. An adverse outcome in such litigation or proceedings may expose us or any future strategic partners to loss of our proprietary position, expose us to significant liabilities, or require us to seek licenses that may not be available on commercially acceptable terms, if at all.

***Confidentiality agreements with employees and third parties may not prevent unauthorized disclosure of trade secrets and other proprietary information.***

In addition to patents, we rely on trade secrets, technical know-how, and proprietary information concerning our business strategy in order to protect our competitive position in the field of stem cell research and product candidate development. In the course of our research and development activities and other business activities, we often rely on confidentiality agreements to protect our proprietary information. Such confidentiality agreements are used, for example, when we talk to vendors of laboratory or clinical development services or potential strategic partners. In addition, each of our employees is required to sign a confidentiality agreement upon joining the Company. We take steps to protect our proprietary information, and our confidentiality agreements are carefully drafted to protect our proprietary interests. Nevertheless, there can be no guarantee that an employee or an outside party will not make an unauthorized disclosure of our proprietary confidential information. This might happen intentionally or inadvertently. It is possible that a competitor will make use of such information, and that our competitive position will be compromised, in spite of any legal action we might take against persons making such unauthorized disclosures.

Trade secrets are difficult to protect. Although we use reasonable efforts to protect our trade secrets, our employees, consultants, contractors, or outside scientific collaborators might intentionally or inadvertently disclose our trade secret information to competitors. Enforcing a claim that a third party illegally obtained and is using any of our trade secrets is expensive and time consuming, and the outcome is unpredictable. In addition, courts outside the United States sometimes are less willing than U.S. courts to protect trade secrets. Moreover, our competitors may independently develop equivalent knowledge, methods and know-how.

Our research and development strategic partners may have rights to publish data and other information to which we have rights. In addition, we sometimes engage individuals or entities to conduct research relevant to our business. The ability of these individuals or entities to publish or otherwise publicly disclose data and other information generated during the course of their research is subject to certain contractual limitations. These contractual provisions may be insufficient or inadequate to protect our confidential information. If we do not apply for patent protection prior to such publication, or if we cannot otherwise maintain the confidentiality of our proprietary technology and other confidential information, then our ability to obtain patent protection or to protect our trade secret information may be jeopardized.

***Intellectual property rights do not necessarily address all potential threats to our competitive advantage.***

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations, and may not adequately protect our business, or permit us to maintain our competitive advantage. The following examples are illustrative:

- Others may be able to make compounds that are the same as or similar to our product candidates but that are not covered by the claims of the patents that we may own or have exclusively licensed;
- We or our licensors or any future strategic partners might not have been the first to make the inventions covered by the issued patent or pending patent application that we may own or have exclusively licensed;
- We or our licensors or any future strategic partners might not have been the first to file patent applications covering certain of our inventions;
- Others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights;
- It is possible that our pending patent applications will not lead to issued patents;
- Issued patents that we own or have exclusively licensed may not provide us with any competitive advantages, or may be held invalid or unenforceable, as a result of legal challenges by our competitors;
- Our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- We may not develop additional proprietary technologies that are patentable; and
- The patents of others may have an adverse effect on our business.

***Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products.***

As is the case with other development stage biotechnology companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biotechnology and pharmaceutical industries involve both technological and legal complexity. Therefore, obtaining and enforcing patents is costly, time-consuming and inherently uncertain. In addition, Congress has passed patent reform legislation which provides new limitations on attaining, maintaining and enforcing intellectual property. Further, the Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts, and the US PTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future.

***If we are not able to obtain and enforce patent protection or other commercial protection for AV-101, the value of AV-101 will be harmed.***

Commercial protection of AV-101, our small molecule drug candidate for neuropathic pain and other neurological conditions is important to our business. Our success related to AV-101 will depend in part on our or a potential collaborator's ability to obtain and enforce potential patents and maintain our trade secrets and secure New Drug Product Exclusivity provided by the FDA under section 505(c)(3)(E) and 505(j)(5)(F) of the Federal Food, Drug, and Cosmetic Act.

Additional patents may not be granted, and potential U.S. patents, if issued, might not provide us with commercial benefit or might be infringed upon, invalidated or circumvented by others. The principle U.S. method of use patent and its foreign counterparts for AV-101 have expired. Although we have recently filed three new U.S. patent applications relating to AV-101, we or others with whom we may collaborate for the development and commercialization of AV-101 may choose not to seek, or may be unable to obtain, patent protection in a country that could potentially be an important market for AV-101.

***We may become subject to damages resulting from claims that we or our future employees have wrongfully used or disclosed alleged trade secrets of our employees' former employers.***

Our ability to execute on our business plan will depend on the talents and efforts of highly skilled individuals with specialized training in the field of stem cell research and bioassay development, as well as medicinal chemistry and *in vitro* drug candidate screening and nonclinical and clinical development. Our future success depends on our ability to identify, hire and retain these highly skilled personnel during our development stage. We may hire additional highly skilled scientific and technical employees, including employees who may have been previously employed at biopharmaceutical companies, including our competitors or potential competitors, and who may have executed invention assignments, nondisclosure agreements and/or non-competition agreements in connection with such previous employment. As to such future employees, we may become subject to claims that we, or these future employees, have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers. Litigation may be necessary to defend against these claims. If we fail in defending such claims, in addition to paying monetary damages, we may lose valuable intellectual property or personnel. A loss of key research personnel or their work product could hamper or prevent our ability to commercialize certain potential products, which could severely harm our business. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

#### **Risks Related to our Common Stock**

***There is no assurance that an active, liquid and orderly trading market will develop for our common stock or what the market price of our common stock will be and, as a result, it may be difficult for you to sell your shares of our common stock.***

Since we became a publicly-traded company in May 2011, there has been a limited public market for shares of our common stock on the OTCQB Marketplaces (*OTCQB*). We do not yet meet the initial listing standards of the New York Stock Exchange, the NASDAQ Capital Market, or other similar national securities exchanges. Until our common stock is listed on a broader exchange, we anticipate that it will remain quoted on the OTCQB, another over-the-counter quotation system, or in the "pink sheets." In those venues, investors may find it difficult to obtain accurate quotations as to the market value of our common stock. In addition, if we fail to meet the criteria set forth in SEC regulations, various requirements would be imposed by law on broker-dealers who sell our securities to persons other than established customers and accredited investors. Consequently, such regulations may deter broker-dealers from recommending or selling our common stock, which may further affect liquidity. This could also make it more difficult to raise additional capital.

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We cannot predict the extent to which investor interest in our company will lead to the development of a more active trading market on the OTCQB, whether we will meet the initial listing standards of the New York Stock Exchange, the NASDAQ Capital Market, or other similar national securities exchanges, or how liquid that market might become. If an active trading market does not develop, you may have difficulty selling any of the shares of our common stock that you buy. In addition, the trading price of our common stock may be highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control. These factors include:

- actual or anticipated quarterly variation in our results of operations or the results of our competitors;
- announcements by us or our competitors of new commercial products, significant contracts, commercial relationships or capital commitments;
- financial projections we may provide to the public, any changes to those projections, or our failure to meet those projections;
- issuance of new or changed securities analysts' reports or recommendations for our stock;
- developments or disputes concerning our intellectual property or other proprietary rights;
- commencement of, or our involvement in, litigation;
- market conditions in the biopharmaceutical and life sciences sectors;
- failure to complete significant sales;
- changes in legislation and government regulation;
- public concern regarding the safety, efficacy or other aspects of our products;
- entering into, changing or terminating collaborative relationships;
- any shares of our common stock or other securities eligible for future sale;
- any major change to the composition of our board of directors or management; and
- general economic conditions and slow or negative growth of our markets.

The stock market in general, and biotechnology-based companies like ours in particular, has from time to time experienced volatility in the market prices for securities that often has been unrelated to the operating performance of the underlying companies. These broad market and industry fluctuations may adversely affect the market price of our common stock, regardless of our operating performance. In certain recent situations in which the market price of a stock has been volatile, holders of that stock have instituted securities class action litigation against such company that issued the stock. If any of our stockholders were to bring a lawsuit against us, the defense and disposition of the lawsuit could be costly and divert the time and attention of our management and harm our operating results. Additionally, if the trading volume of our common stock remains low and limited there will be an increased level of volatility and you may not be able to generate a return on your investment.

*A significant portion of our total outstanding shares are restricted from immediate resale but may be sold into the market in the near future. Future sales of shares by existing stockholders could cause our stock price to decline, even if our business is doing well.*

Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock. Prior to this date of this report, there has been a limited public market for shares of our common stock on the OTCQB. Future sales of substantial amounts of shares of our common stock, including shares issued upon the exchange of our Series A Preferred Stock, conversion of convertible promissory notes and exercise of outstanding options and warrants for common stock, in the public market, or the possibility of these sales occurring, could cause the prevailing market price for our common stock to fall or impair our ability to raise equity capital in the future.

***Our principal institutional stockholders may continue to have substantial control over us and could limit your ability to influence the outcome of key transactions, including changes in control.***

Certain of our current institutional stockholders and their respective affiliates beneficially own approximately 46% of our outstanding capital stock, as beneficial ownership is defined by SEC rules and regulations. Accordingly, these stockholders may continue to have substantial influence over the outcome of corporate actions requiring stockholder approval, including the election of directors, any merger, consolidation or sale of all or substantially all of our assets or any other significant corporate transactions. These stockholders may also delay or prevent a change of control of us, even if such a change of control would benefit our other stockholders. The significant concentration of stock ownership may adversely affect the trading price of our common stock due to investors' perception that conflicts of interest may exist or arise. For information regarding the ownership of our outstanding stock by such stockholders, refer to Item 12, "Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters" in this Annual Report on Form 10-K.

***If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, our stock price and trading volume could decline.***

The trading market for our common stock may depend in part on the research and reports that securities or industry analysts publish about us and our business. Securities and industry analysts do not currently, and may never, publish research on our company. If no or too few securities or industry analysts commence coverage of our company, the trading price for our stock would likely be negatively impacted. In the event securities or industry analysts initiate coverage, if one or more of the analysts who cover us downgrade our stock or publish inaccurate or unfavorable research about our business, our stock price would likely decline. In the event we obtain analyst coverage, we will not have any control of the analysts or the content and opinions included in their reports. If one or more equity research analysts cease coverage of our company or fail to publish reports on us regularly, demand for our stock could decrease, which in turn could cause our stock price or trading volume to decline.

***There may be additional issuances of shares of preferred stock in the future.***

Following approval by our stockholders in October 2011, our Articles of Incorporation permit us to issue up to 10.0 million shares of preferred stock and our Board has authorized the issuance of 500,000 shares of Series A Preferred, all of which shares are currently issued and outstanding. Our board of directors could authorize the issuance of additional series of preferred stock in the future and such preferred stock could grant holders preferred rights to our assets upon liquidation, the right to receive dividends before dividends would be declared to holders of our common stock, and the right to the redemption of such shares, possibly together with a premium, prior to the redemption of the common stock. In the event and to the extent that we do issue additional preferred stock in the future, the rights of holders of our common stock could be impaired thereby, including without limitation, with respect to liquidation.

Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with GAAP. Our management is currently required to assess the effectiveness of our controls and we are required to disclose changes made in our internal control over financial reporting on a quarterly basis. As a "smaller reporting company," however, our independent registered public accounting firm is not required to attest to the effectiveness of our internal control over financial reporting pursuant to Section 404 of the Sarbanes-Oxley Act of 2002. If we cannot continue to favorably assess the effectiveness of our internal control over financial reporting, or if our independent registered public accounting firm is unable to provide an unqualified attestation report on our internal controls whenever required in the future, investors could lose confidence in our financial information and the price of our common stock could decline. Additionally, should we cease to be a "smaller reporting company," we will incur additional expense and management effort to facilitate the required attestation of the effectiveness of our internal control over financial reporting by our independent registered public accounting firm.

***Our common stock may be considered a "penny stock."***

Since we became a publicly-traded company in May 2011, our common stock has traded on the OTCQB at a price of less than \$5.00 per share. The SEC has adopted regulations which generally define a "penny stock" as an equity security that has a market price of less than \$5.00 per share, subject to specific exemptions. To the extent that the market price of our common stock is less than \$5.00 per share and, therefore, may be considered a "penny stock," brokers and dealers effecting transactions in our common stock must disclose certain information concerning the transaction, obtain a written agreement from the purchaser and determine that the purchaser is reasonably suitable to purchase the securities. These rules may restrict the ability of brokers or dealers to sell our common stock and may affect your ability to sell shares of our common stock. In addition, as long as our common stock remains quoted only on the OTCQB, investors may find it difficult to obtain accurate quotations of the stock, and may find few buyers to purchase such stock and few market makers to support its price.

***We have never paid dividends on our capital stock, and we do not anticipate paying any cash dividends in the foreseeable future.***

We have paid no cash dividends on any of our classes of capital stock to date and currently intend to retain our future earnings, if any, to fund the development and growth of our business. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future. Any payment of cash dividends will depend upon our financial condition, contractual restrictions, financing agreement covenants, solvency tests imposed by corporate law, results of operations, anticipated cash requirements and other factors and will be at the discretion of our board of directors. Furthermore, we may incur indebtedness that may severely restrict or prohibit the payment of dividends.

**Item 1B. Unresolved Staff Comments**

The disclosures in this section are not required since we qualify as a smaller reporting company.

**Item 2. Properties**

Our principal executive offices and laboratories are located at 343 Allerton Avenue, South San Francisco, California 94080, where we occupy approximately 10,900 square feet of office and lab space under a lease expiring on July 31, 2017. We believe that our facilities are suitable and adequate for our current and foreseeable needs.

**Item 3. Legal Proceeding**

From time to time, we may become involved in claims and other legal matters arising in the ordinary course of business. We are not presently involved in any legal proceeding nor do we know of any legal proceeding which is threatened or contemplated.

**Item 4. Mine Safety Disclosures**

Not applicable.

**PART II**

**Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities**

**Market Information**

On June 21, 2011 our common stock began trading on the OTC Marketplace (*OTCQB*), under the symbol "VSTA". There was no established trading market for our common stock prior to that date.

Shown below is the range of high and low sales prices for our common stock for the periods indicated as reported by the OTCQB. The market quotations reflect inter-dealer prices, without retail mark-up, mark-down or commissions and may not necessarily represent actual transactions.

|  | <u>High</u> | <u>Low</u> |
|--|-------------|------------|
| <b>Year Ending March 31, 2014</b>        |             |            |
| First quarter ending June 30, 2013       | \$ 0.90     | \$ 0.60    |
| Second quarter ending September 30, 2013 | \$ 0.89     | \$ 0.55    |
| Third quarter ending December 31, 2013   | \$ 0.61     | \$ 0.26    |
| Fourth quarter ending March 31, 2014     | \$ 0.50     | \$ 0.28    |
| <b>Year Ending March 31, 2013</b>        |             |            |
| First quarter ending June 30, 2012       | \$ 2.80     | \$ 0.50    |
| Second quarter ending September 30, 2012 | \$ 1.50     | \$ 0.51    |
| Third quarter ending December 31, 2012   | \$ 0.95     | \$ 0.55    |
| Fourth quarter ending March 31, 2013     | \$ 0.90     | \$ 0.60    |

On June 19, 2014 the closing price of our common stock on the OTCQB was \$0.65 per share.

As of June 19, 2014, we had 25,451,877 shares of common stock outstanding and approximately 300 stockholders of record. On the same date, one stockholder held all 500,000 outstanding restricted shares of our Series A Preferred.

**Dividend Policy**

We have not paid any dividends in the past and we do not anticipate that we will pay dividends in the foreseeable future. Covenants in certain of our debt agreements prohibit us from paying dividends while the debt remains outstanding.

**Issuer Purchase of Equity Securities**

There were no repurchases of our common stock during the fiscal year ended March 31, 2014

**Recent Sales of Unregistered Securities**

During the three years preceding the date of this report, we issued the following securities in private placement transactions which were not registered under the Securities Act of 1933, as amended (*Securities Act*) and that have not been previously reported in a Quarterly Report on Form 10-Q or a Current Report on Form 8-K:

**2013/2014 Unit Private Placement**

On March 11, 2014, we entered into a securities purchase agreement with an accredited investor pursuant to which we sold Units consisting of an aggregate of (i) a 10% convertible note in the face amount of \$37,500 maturing on July 30, 2014 (*2013/2014 Unit Note*); (ii) 75,000 shares of our restricted common stock; and (iii) a warrant exercisable through July 30, 2016 to purchase 75,000 shares of our restricted common stock at an exercise price of \$1.00 per share (*Unit Warrant*). We received cash proceeds of \$37,500 which we used for general corporate purposes. The Unit Note and related accrued interest are convertible into shares of our restricted common stock at a conversion price of \$0.50 per share at or prior to maturity at the option of the investor. The Units were offered and sold in a transaction exempt from registration under the Securities Act, in reliance on Section 4(2) thereof.

**Securities Issued in Satisfaction of Technology License and Maintenance Fees and Patent Expenses**

On April 10, 2014, we issued (i) a promissory note in the face amount of \$300,000 due on the earlier of December 31, 2014 or the completion of a qualified financing, as defined, (ii) 300,000 restricted shares of our common stock and (iii) a warrant exercisable through March 31, 2019 to purchase 300,000 restricted shares of our common stock at an exercise price of \$0.50 per share to Icahn School of Medicine at Mount Sinai in satisfaction of \$288,400 of license maintenance fees and reimbursable patent prosecution costs. The securities were issued in a private placement transaction exempt from registration under the Securities Act, in reliance on Section 4(2) thereof.

**Securities Issued for Consulting Services**

On May 21, 2014, we issued to an accredited investor 200,000 restricted shares of our common stock as partial compensation under the terms of a strategic consulting agreement. The securities were issued in a private placement transaction exempt from registration under the Securities Act, in reliance on Section 4(2) thereof.

**Item 6. Selected Financial Data**

The disclosures in this section are not required since we qualify as a smaller reporting company.



## Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

### Special Note Regarding Forward-Looking Statements

This Annual Report on Form 10-K includes forward-looking statements. All statements contained in this Annual Report on Form 10-K other than statements of historical fact, including statements regarding our future results of operations and financial position, our business strategy and plans, and our objectives for future operations, are forward-looking statements. The words "believe," "may," "estimate," "continue," "anticipate," "intend," "expect" and similar expressions are intended to identify forward-looking statements. We have based these forward-looking statements largely on our current expectations and projections about future events and trends that we believe may affect our financial condition, results of operations, business strategy, short-term and long-term business operations and objectives, and financial needs. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in the "Risk Factors" section. Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the future events and trends discussed in this Annual Report on Form 10-K may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. The events and circumstances reflected in the forward-looking statements may not be achieved or occur. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. We are under no duty to update any of these forward-looking statements after the date of this Annual Report on Form 10-K or to conform these statements to actual results or revised expectations. If we do update one or more forward-looking statements, no inference should be drawn that we will make additional updates with respect to those or other forward-looking statements.

### Business Overview

We are a stem cell company headquartered in South San Francisco, California and focused on drug rescue and regenerative medicine. We believe *better cells lead to better medicine*<sup>™</sup> and that the key to making better cells is precisely controlling the differentiation of human pluripotent stem cells, which are the building blocks of all cells of the human body. For over 15 years, our stem cell research and development teams and collaborators have focused on controlling the differentiation of pluripotent stem cells to produce multiple types of mature, functional, adult human cells, with emphasis on human heart and liver cells for drug rescue applications.

#### *Our Stem Cell Technology Platform - Human Clinical Trials in a Test Tube*<sup>™</sup>

Our stem cell technology platform, which we refer to as *Human Clinical Trials in a Test Tube*, is based on a combination of proprietary and exclusively licensed technologies for controlling the differentiation of human pluripotent stem cells into multiple types of mature, functional, adult human cells that we use, or plan to develop, to reproduce complex human biology and disease. We are currently producing human heart cells and liver cells for our drug rescue applications. However, we also intend to advance, internally and through collaborative research projects, production of pluripotent stem cell-derived blood, bone, cartilage, and pancreatic beta-islet cells and explore ways to leverage our stem cell technology platform for regenerative medicine purposes. Our interest in the regenerative medicine arena is on developing novel human disease models for discovery of small molecule drugs and biologics that activate the endogenous growth and healing processes enabling the body to repair tissue damage caused by certain degenerative diseases.

### **CardioSafe 3D™**

Using mature cardiomyocytes (heart cells) differentiated from human pluripotent stem cells, we have developed *CardioSafe 3D*, as a novel, *in vitro* bioassay system used to assess new drug candidates for potential cardiac toxicity before they are tested in animals or humans. We believe *CardioSafe 3D* is capable of predicting the *in vivo* cardiac effects, both toxic and non-toxic, of small molecule drug candidates with greater speed and precision than the long-established, surrogate safety models most often used in drug development, including models using animal cells or live animals, and cellular assays using cadaver, immortalized or transformed cells. Our pluripotent stem cell derived cardiomyocytes (heart cells) and *CardioSafe 3D* are key components of our *Human Clinical Trials in a Test Tube* platform and drug rescue programs.

### **LiverSafe 3D™**

Using mature, functional adult hepatocytes (liver cells) derived from human pluripotent stem cells, we are correlating *LiverSafe 3D*, our second novel stem cell technology-based bioassay system, with reported clinical results. We believe *LiverSafe 3D* will enable us to assess, early in development, new drug candidates for potential drug-induced liver toxicity and particularly metabolism issues that can result in serious adverse drug-drug interactions, before animal or human testing. We plan to use *LiverSafe 3D*, and the clinically predictive liver biology insight we believe it will provide us, to expand the scope of our commercial opportunities related to drug rescue.

### **Drug Rescue**

We believe drug rescue using our novel *in vitro* bioassay systems, *CardioSafe 3D* and *LiverSafe 3D*, the foundation of our *Human Clinical Trials in a Test Tube* platform, is the highest-value near term commercial application of the human cells we produce. Detailed information is available to us in the public domain regarding the efficacy, pharmacology, formulation and toxicity of promising small molecule drug candidates developed by pharmaceutical and biotechnology companies which have failed due to unexpected heart or liver toxicity. These failed but still promising drug candidates, which we refer to as *Drug Rescue Candidates™*, have already been optimized and tested by a pharmaceutical or biotechnology company and assessed for efficacy and commercial potential.

Failure of promising *Drug Rescue Candidates* due to unexpected human clinical toxicity highlights the need for new paradigms to evaluate potential heart and liver toxicity early in drug development. While efforts of pharmaceutical and biotechnology companies to improve their prediction of such human clinical toxicity for new drug candidates is ongoing, the existence of *Drug Rescue Candidates™* offers us an opportunity to use our novel stem cell technology to take advantage of prior third-party investment in *Drug Rescue Candidates* with early signs of efficacy, by significantly reducing the toxicity that caused them to be terminated, and bring new, safer versions back into development protected by new intellectual property. We refer to the new, safer versions of *Drug Rescue Candidates* we intend to produce with our medicinal chemistry collaborator and validate internally in our bioassay systems as *Drug Rescue Variants™*.

Through stem cell technology-based drug rescue, our objective is to become a leading source of proprietary, small molecule drug candidates to the global pharmaceutical industry. We have designed our drug rescue model to leverage publicly available information and substantial prior investment by pharmaceutical companies and others in *Drug Rescue Candidates*. The key commercial objective of our drug rescue model is to generate revenue from license, development and commercialization arrangements involving *Drug Rescue Variants*. We anticipate that each validated lead *Drug Rescue Variant* will be suitable as a promising new drug development program, either internally or in collaboration with a strategic partner.

### **Our Drug Rescue Strategy**

We believe the pre-existing public domain knowledge base supporting the therapeutic and commercial potential of our *Drug Rescue Candidates* will provide us with a valuable head start as we launch our drug rescue programs. Leveraging the substantial prior investments by global pharmaceutical companies and others in discovery, optimization and efficacy validation of *Drug Rescue Candidates* is an essential component of our drug rescue strategy.

Our current drug rescue emphasis is on *Drug Rescue Candidates* discontinued prior to FDA market approval due to unexpected cardiac safety concerns. By using our *CardioSafe* 3D assay platform to enhance our understanding of the cardiac liability profile of *Drug Rescue Candidates*, biological insight not previously available when the *Drug Rescue Candidate* was originally discovered and developed, we believe we can demonstrate in vitro proof-of-concept as to the efficacy and safety of *Drug Rescue Variants* earlier in development and with substantially less investment in discovery, efficacy optimization and development than was required of the pharmaceutical companies prior to their decision to terminate the *Drug Rescue Candidates*.

The key elements of our *CardioSafe* 3D drug rescue strategy are as follows:

- identify potential *Drug Rescue Candidates* with heart safety issues utilizing drug discovery and development information available in the public domain through open source, licensed databases, and published patents, as well as through our strategic relationships with our drug rescue and scientific advisors and consultants, including Synterys, Inc. and Cato Research Ltd., our preferred provider of contract medicinal chemistry and contract clinical development and regulatory services, respectively;
- leverage substantial prior research and development investments made by global pharmaceutical companies and others to analyse internally the therapeutic and commercial potential of *Drug Rescue Candidates*, as important criteria for selection of *Drug Rescue Candidates* and potential lead *Drug Rescue Variants*;
- use *CardioSafe* 3D to enhance our understanding of the cardiac liability profile of *Drug Rescue Candidates*, important and more comprehensive biological insights not available when the *Drug Rescue Candidates* were originally discovered and developed by pharmaceutical companies;
- leverage our internal knowledge base about each *Drug Rescue Candidate*'s specific chemistry to design and produce a portfolio of novel potential lead *Drug Rescue Variants* for each *Drug Rescue Candidate*;
- use *CardioSafe* 3D and pre-existing *in vitro* efficacy models to assess the efficacy and cardiac safety of potential *Drug Rescue Variants* and identify and validate a lead *Drug Rescue Variant*; and
- internally develop validated lead *Drug Rescue Variants* or out-license them to a global pharmaceutical company in revenue-generating agreements providing for the full development, market approval and commercial sale.

We believe our exclusive focus on Drug Rescue Candidates with established therapeutic and commercial potential, and our ability to build on that valuable head start using our expertise in human biology, will help us to generate Drug Rescue Variants without incurring certain high costs and risks typically inherent in drug discovery and development. Although we plan to continue to identify Drug Rescue Candidates in the public domain, we may also seek to acquire rights to Drug Rescue Candidates not available to us in the public domain through in-licensing arrangements with third-parties.

#### **Strategic Licensing of Drug Rescue Variants**

We believe many pharmaceutical companies are experiencing, and will continue to experience, critical research and development productivity issues, as measured by their lack of, or very low number of, FDA-approved products each year during the past decade. For example, in 2013, the U.S. pharmaceutical industry invested over \$51 billion in research and development and the Center for Drug Evaluation and Research (CDER) of the FDA approved a total of only 39 novel drugs, known as New Molecular Entities (NMEs). In 2013, CDER approved only 27 NMEs, thirteen of which NME approvals (48%) were received by only five pharmaceutical companies, including Bayer (two), GlaxoSmithKline (four), Johnson & Johnson (three), Roche (two) and Takeda (two). Despite remarkable levels of research and development investment by the global pharmaceutical industry as a whole, since 2003, the FDA has only approved an average of approximately 26 NMEs per year. In addition, we believe many pharmaceutical companies with established products that are no longer patent protected are also experiencing substantial market pressure from generic competition.

As a result of research and development productivity issues, diminishing product pipelines and generic competition, we believe there is and will continue to be a critical need among pharmaceutical companies to license or acquire the new, safer *Drug Rescue Variants* we are focused on developing, including companies that originally discovered, developed and ultimately discontinued the *Drug Rescue Candidates* we select for our drug rescue programs.

Once we achieve proof-of-concept (POC) *in vitro* as to the efficacy and safety of a lead *Drug Rescue Variant*, we intend to announce the results of our internal POC studies and, at that time, consider whether we will seek to license that *Drug Rescue Variant* to a pharmaceutical company, including the company that developed the *Drug Rescue Candidate*, or further develop it internally on our own. If we decide to license a lead *Drug Rescue Variant* to a pharmaceutical company, through a form of license arrangement we believe is generally accepted in the pharmaceutical industry, we anticipate that the pharmaceutical company will be responsible for all subsequent development, manufacturing, regulatory approval, marketing and sale of the *Drug Rescue Variant* and that we will receive licensing revenue through payments to us from the license upon signing the license agreement, achievement of development and regulatory milestones, and, if approved and marketed, upon commercial sales.

### **Regenerative Medicine and Drug Discovery**

Although we believe the best and most valuable near term commercial application of our stem cell technology platform, *Human Clinical Trials in a Test Tube*, is for small molecule drug rescue, we also believe stem cell technology-based regenerative medicine has the potential to transform healthcare in the U.S. over the next decade by altering the fundamental mechanisms of disease. We are interested in exploring ways to leverage our stem cell technology platform for regenerative medicine purposes, with emphasis on developing novel human disease models for discovery of small molecule drugs with regenerative and therapeutic potential. Our regenerative medicine focus will be based on our expertise in human biology, differentiation of human pluripotent stem cells to develop functional adult human cells and tissues involved in human disease, including blood, bone, cartilage, heart, liver and insulin-producing pancreatic beta-islet cells, and our expertise in formulating customized biological assays with the cells we produce. Among our key objectives will be to explore regenerative medicine opportunities through pilot nonclinical proof-of-concept studies, after which we intend to assess any potential opportunities for further development and commercialization of therapeutically and commercially promising regenerative medicine programs and novel, customized, disease-specific biological assays, either on our own or with strategic partners.

#### **AV-101 for Neuropathic Pain, Epilepsy and Depression**

With \$8.8 million of grant funding awarded from the U.S. National Institutes of Health, we have successfully completed Phase 1 development of AV-101. AV-101, also known as "L-4-chlorokynurenine" and "4-Cl-KYN", is an orally available non-sedating, small molecule prodrug candidate aimed at the multi-billion dollar neurological disease and disorders market, including neuropathic pain, a serious and chronic condition causing pain after an injury or disease of the peripheral or central nervous system, epilepsy, depression and Parkinson's disease. Our AV-101 IND application, on file with the FDA, covers clinical development for neuropathic pain. However, we believe the Phase 1 AV-101 safety studies completed to date will support development of AV-101 for multiple indications, including epilepsy, depression and Parkinson's disease. We intend to seek potential opportunities for further clinical development and commercialization of AV-101 for neuropathic pain, epilepsy, depression and Parkinson's disease, on our own or with strategic partners. In the event that we successfully complete one or more strategic partnering arrangements for AV-101, we plan to use the net proceeds from such an arrangement(s) to expand our stem cell technology-based drug rescue and regenerative medicine programs.

#### **The Merger**

VistaGen Therapeutics, Inc., a California corporation incorporated on May 26, 1998 (*VistaGen California*), is our wholly-owned subsidiary. Excaliber Enterprises, Ltd. (*Excaliber*), a publicly-held company (formerly OTCBB: EXCA) was incorporated under the laws of the State of Nevada on October 6, 2005. Pursuant to a strategic merger transaction on May 11, 2011, Excaliber acquired all outstanding shares of VistaGen California in exchange for 6,836,452 shares of our common stock and assumed all of VistaGen California's pre-Merger obligations (the *Merger*). Shortly after the Merger, Excaliber's name was changed to "VistaGen Therapeutics, Inc." (a Nevada corporation).

VistaGen California, as the accounting acquirer in the Merger, recorded the Merger as the issuance of common stock for the net monetary assets of Excaliber, accompanied by a recapitalization. The accounting treatment for the Merger was identical to that resulting from a reverse acquisition, except that we recorded no goodwill or other intangible assets. A total of 1,569,000 shares of our common stock, representing the shares held by stockholders of Excaliber immediately prior to the Merger and effected for a post-Merger two-for-one (2:1) stock split, have been retroactively reflected as outstanding for all periods presented in the Consolidated Financial Statements of the Company included in Item 8 of this Annual Report on Form 10-K. Additionally, the Consolidated Balance Sheets retroactively reflect the \$0.001 par value of Excaliber's common stock.

In October 2011, our stockholders amended our Articles of Incorporation to authorize us to issue up to 200 million shares of common stock and up to 10 million shares of preferred stock and to authorize our Board of Directors to prescribe the classes, series and the number of each class or series of preferred stock and the voting powers, designations, preferences, limitations, restrictions and relative rights of each class or series of preferred stock. In December 2011, our Board of Directors authorized the creation of a series of up to 500,000 shares of Series A Preferred Stock, par value \$0.001 (*Series A Preferred*). Pursuant to the Note Exchange and Purchase Agreement of October 11, 2012 (the *October 2012 Agreement*), as amended, between us and Platinum Long Term Growth VII, LLC (*Platinum*), currently our largest institutional security holder, Platinum has the right and option to exchange the 500,000 shares of our Series A Preferred Stock that it holds for (i) 15,000,000 restricted shares of our common stock, and (ii) a five-year warrant to purchase 7,500,000 restricted shares of our common stock at an exercise price of \$0.50 per share.

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The Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K represent the activity of VistaGen California from May 26, 1998, and the consolidated activity of VistaGen California and Excaliber (now VistaGen Therapeutics, Inc., a Nevada corporation), from May 11, 2011 (the date of the Merger). The Consolidated Financial Statements also include the accounts of VistaGen California's two wholly-owned subsidiaries, Artemis Neuroscience, Inc., a Maryland corporation (*Artemis*), and VistaStem Canada, Inc., a corporation organized under the laws of Ontario, Canada (*VistaStem Canada*).

**Financial Operations Overview**

*Net Loss*

We are in the development stage and, since inception, have devoted substantially all of our time and efforts to hPSC research and bioassay development, small molecule drug development, creating, protecting and patenting intellectual property, recruiting personnel and raising working capital. As of March 31, 2014, we had an accumulated deficit of \$70.6 million. Our net loss for the years ended March 31, 2014 and 2013 was \$3.0 million and \$12.9 million, respectively. We expect these conditions to continue for the foreseeable future as we expand our drug rescue activities and the capabilities of our *Human Clinical Trials in a Test Tube™* platform.

*Summary of Fiscal Year 2014*

During fiscal 2014, our scientific personnel have continued to expand the drug rescue capabilities of *CardioSafe* 3D and further develop *LiverSafe* 3D. Our internal scientific operations were curtailed somewhat during our second fiscal quarter as we decommissioned our former lab space in preparation for the move to expanded lab and office facilities at the end of July 2013, and completed the corresponding relocation, recalibration and recertification of our laboratories and equipment following the move. Limited cash resources following the move, resulting in part from the failure to close the financing described below, continued to restrict certain scientific activities and collaborations for the remainder of the fiscal year. Nevertheless, we have continued to advance the capabilities of our heart and liver cells and pursue our internal evaluation of prospective drug rescue candidates. We successfully completed Phase 1 clinical development of AV-101 during our fiscal year ended March 31, 2013 and directed effort during the first quarter of fiscal 2014 to finalizing AV-101 Phase 1b clinical study reports, as required under the terms of our NIH grant awards and to facilitate further collaborative development of AV-101.

Throughout fiscal 2014, our executive management has been significantly focused on providing sufficient operating capital to advance our research and development objectives while meeting our continuing operational needs. To that end, in April 2013, we entered into a Securities Purchase Agreement (as amended, *Securities Purchase Agreement*) with Autilion AG, a company organized and existing under the laws of Switzerland (*Autilion*), under which Autilion is contractually obligated to purchase an aggregate of 72.0 million restricted shares of our common stock at a purchase price of \$0.50 per share for aggregate cash proceeds to us of \$36.0 million (the *Autilion Financing*). To date, Autilion has completed only a nominal closing under the Securities Purchase Agreement. Therefore, Autilion is in default under the Securities Purchase Agreement and we can give no assurance that Autilion will complete a material closing under the Securities Purchase Agreement.

To meet our working capital needs as a result of Autilion's default under the Securities Purchase Agreement, during June and July 2013, we offered certain warrant holders the opportunity to exercise outstanding warrants having an exercise price of \$1.50 per share to purchase shares of our restricted common stock at a reduced exercise price of \$0.50 per share. Participating warrant holders exercised modified warrants to purchase an aggregate of 528,370 restricted shares of our common stock and we received cash proceeds of \$264,200. In addition, certain long-term warrant holders exercised modified warrants to purchase 16,646 restricted shares of our common stock in lieu of payment by us in satisfaction of amounts due for professional services in the aggregate amount of \$8,300. Additionally, in July 2013, we issued to Platinum a senior secured convertible note in the face amount of \$250,000 (the *July 2013 Note*) and a five-year warrant to purchase 250,000 restricted shares of our common stock at an exercise price of \$0.50 per share. Between August 2013 and March 14, 2014, we entered into securities purchase agreements with certain accredited investors pursuant to which we sold units of our securities (*Units*) consisting, in aggregate, of: (i) 10% convertible notes maturing on July 30, 2014 in the aggregate face amount of \$1,007,500; (ii) an aggregate of 2,015,000 restricted shares of our common stock; and (iii) warrants exercisable through July 30, 2016 to purchase an aggregate of 2,015,000 restricted shares of our common stock at an exercise price of \$1.00 per share. We received cash proceeds of \$1,007,500 from the sale of the Units, including \$50,000 in lieu of repayment of previous advances made to us by one of our executive officers.

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Between late-March 2014 and the date of this report, we have entered into subscription agreements with accredited investors, including Platinum, which has purchased \$750,000 of such securities through June 19, 2014, pursuant to which we sold Units of our securities consisting, in aggregate, of: (i) 10% convertible notes maturing on March 31, 2015 in the aggregate face amount of \$1,515,000; (ii) an aggregate of 1,515,000 restricted shares of our common stock; and (iii) warrants exercisable through December 31, 2016 to purchase an aggregate of 1,515,000 restricted shares of our common stock at an exercise price of \$0.50 per share.

Given our working capital constraints during fiscal 2014, we attempted to minimize cash commitments and expenditures for external research and development and general and administrative services to the greatest extent possible, particularly during the later portion of the fiscal year. The following table summarizes the results of our operations for the fiscal years ended March 31, 2014 and 2013 (amounts in \$000):

|  | <b>Fiscal Years Ended March 31,</b> |             |
|--|-------------------------------------|-------------|
|  | <b>2014</b>                         | <b>2013</b> |
| Revenues:                                    |                                     |             |
| Grant revenue                                | \$ -                                | \$ 200      |
| Operating expenses:                          |                                     |             |
| Research and development                     | 2,481                               | 3,431       |
| General and administrative                   | 2,548                               | 3,562       |
| Total operating expenses                     | 5,029                               | 6,993       |
| Loss from operations                         | (5,029)                             | (6,793)     |
| Other expenses, net:                         |                                     |             |
| Interest expense, net                        | (1,503)                             | (921)       |
| Change in warrant liabilities                | 3,567                               | (1,636)     |
| Loss on early extinguishment of debt         | -                                   | (3,568)     |
| Other income                                 | -                                   | 35          |
| Loss before income taxes                     | (2,965)                             | (12,883)    |
| Income taxes                                 | (3)                                 | (4)         |
| Net loss                                     | \$ (2,968)                          | \$ (12,887) |
| Deemed dividend on Series A Preferred Stock  | -                                   | (10,193)    |
| Net loss attributable to common stockholders | \$ (2,968)                          | \$ (23,080) |

*Revenue*

We have successfully completed our Phase I development of AV-101, our pro-drug candidate for the treatment of neuropathic pain and, potentially, depression and other neurological conditions. Our NIH grant related to AV-101 expired in its normal course on June 30, 2012. We had drawn the maximum amount available under the grant prior to its expiration. Revenue associated with our earlier subcontract research arrangement terminated in May 2012. We had no other grant or contract revenue sources during the fiscal year ended March 31, 2014.

*Research and Development Expense*

Research and development expense represented approximately 49% of our operating expenses for each of the years ended March 31, 2014 and 2013. Research and development costs are expensed as incurred. Research and development expense consists of both internal and external expenses incurred in sponsored stem cell research and drug development activities, costs associated with the development of AV-101 and costs related to the licensing, application and prosecution of our intellectual property. These expenses primarily consist of the following:

- salaries, benefits, including stock-based compensation costs, travel and related expense for personnel associated with research and development activities;
- fees to contract research organizations and other professional service providers for services related to the conduct and analysis of clinical trials and other development activities;
- fees to third parties for access to licensed technology and costs associated with securing and maintaining patents related to our internally generated inventions;
- laboratory supplies and materials;
- leasing and depreciation of laboratory equipment; and
- allocated costs of facilities and infrastructure.

*General and Administrative Expense*

General and administrative expense consists primarily of salaries and related expense, including stock-based compensation expense, for personnel in executive, finance and accounting, and other support functions. Other costs include professional fees for legal, investor relations and accounting services and other strategic consulting and public company expenses as well as facility costs not otherwise included in research and development expense.

*Other Expenses, Net*

In both fiscal 2014 and 2013, we incurred interest expense, including discount amortization with respect to certain notes, on the outstanding balances of our Senior Secured Convertible Promissory Notes issued to Platinum during fiscal 2013 and in July 2013, on the new and modified notes issued to Morrison & Foerster, Cato Research Ltd. and University Health Network during August and September 2012, and on various notes issued to certain service providers during fiscal years 2011 and 2012. Additionally, in fiscal 2014, we incurred interest expense and related discount amortization attributable to the convertible notes issued in connection with the sale of Units between August 2013 and March 2014. In fiscal 2013, we incurred non-cash losses on extinguishment of debt resulting from the modification of indebtedness to Platinum, Morrison & Foerster, Cato Research Ltd., and University Health Network, as well as the conversion by the holders of our 12% Convertible Promissory Notes issued in February 2012 into restricted shares of our common stock and warrants in November 2012. In fiscal 2014 and 2013, we recorded income and expense, respectively, related to the changes in the fair values of the warrants issued or issuable in connection with the various Senior Secured Convertible Promissory Notes issued to Platinum during fiscal 2013 and 2014.

In fiscal 2013, we also recorded a non-cash deemed dividend related to the modification of the exchange rights of our Series A Preferred Stock held by Platinum and the impact of the prospective issuance of a five-year warrant to purchase restricted shares of our common stock upon Platinum's exercise of its Series A Preferred Stock exchange rights.

## Critical Accounting Policies and Estimates

We consider certain accounting policies related to revenue recognition, impairment of long-lived assets, research and development, stock-based compensation, and income taxes to be critical accounting policies that require the use of significant judgments and estimates relating to matters that are inherently uncertain and may result in materially different results under different assumptions and conditions. The preparation of financial statements in conformity with United States generally accepted accounting principles (*GAAP*) requires us to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes to the consolidated financial statements. These estimates include useful lives for property and equipment and related depreciation calculations, and assumptions for valuing options, warrants and other stock-based compensation. Our actual results could differ from these estimates.

### Revenue Recognition

Although we do not currently have any such arrangements, we have historically generated revenue principally from collaborative research and development arrangements, technology access fees and government grants. We recognize revenue under the provisions of the SEC issued Staff Accounting Bulletin 104, Topic 13, *Revenue Recognition Revised and Updated (SAB 104)* and Accounting Standards Codification (*ASC*) 605-25, *Revenue Arrangements-Multiple Element Arrangements (ASC 605-25)*. Revenue for arrangements not having multiple deliverables, as outlined in *ASC 605-25*, is recognized once costs are incurred and collectability is reasonably assured.

Revenue arrangements with multiple components are divided into separate units of accounting if certain criteria are met, including whether the delivered component has stand-alone value to the customer. Consideration received is allocated among the separate units of accounting based on their respective selling prices. The selling price for each unit is based on vendor-specific objective evidence, or *VSOE*, if available, third party evidence if *VSOE* is not available, or estimated selling price if neither *VSOE* nor third party evidence is available. The applicable revenue recognition criteria are then applied to each of the units.

We recognize revenue when the four basic criteria of revenue recognition are met: (i) a contractual agreement exists; (ii) the transfer of technology has been completed or services have been rendered; (iii) the fee is fixed or determinable; and (iv) collectability is reasonably assured. For each source of revenue, we comply with the above revenue recognition criteria in the following manner:

- Collaborative arrangements typically consist of non-refundable and/or exclusive technology access fees, cost reimbursements for specific research and development spending, and various milestone and future product royalty payments. If the delivered technology does not have stand-alone value, the amount of revenue allocable to the delivered technology is deferred. Non-refundable upfront fees with stand-alone value that are not dependent on future performance under these agreements are recognized as revenue when received, and are deferred if we have continuing performance obligations and have no objective and reliable evidence of the fair value of those obligations. We recognize non-refundable upfront technology access fees under agreements in which we have a continuing performance obligation ratably, on a straight-line basis, over the period in which we are obligated to provide services. Cost reimbursements for research and development spending are recognized when the related costs are incurred and when collectability is reasonably assured. Payments received related to substantive, performance-based "at-risk" milestones are recognized as revenue upon achievement of the milestone event specified in the underlying contracts, which represent the culmination of the earnings process. Amounts received in advance are recorded as deferred revenue until the technology is transferred, costs are incurred, or a milestone is reached.
- Technology license agreements typically consist of non-refundable upfront license fees, annual minimum access fees and/or royalty payments. Non-refundable upfront license fees and annual minimum payments received with separable stand-alone values are recognized when the technology is transferred or accessed, provided that the technology transferred or accessed is not dependent on the outcome of the continuing research and development efforts. Otherwise, revenue is recognized over the period of our continuing involvement.
- Government grant awards, which support our research efforts on specific projects, generally provide for reimbursement of approved costs as defined in the terms of grant awards. We recognize grant revenue when associated project costs are incurred.



*Impairment of Long-Lived Assets*

In accordance with ASC 360-10, *Property, Plant & Equipment—Overall*, we review for impairment whenever events or changes in circumstances indicate that the carrying amount of property and equipment may not be recoverable. Determination of recoverability is based on an estimate of undiscounted future cash flows resulting from the use of the asset and its eventual disposition. In the event that such cash flows are not expected to be sufficient to recover the carrying amount of the assets, we write down the assets to their estimated fair values and recognize the loss in the statements of operations.

*Research and Development Expenses*

Research and development expenses include internal and external costs. Internal costs include salaries and employment related expenses of scientific personnel and direct project costs. External research and development expenses consist of sponsored stem cell research and development costs, costs associated with clinical and non-clinical development of AV-101, our lead drug candidate, and costs related to application and prosecution of patents related to our stem cell technology platform, *Human Clinical Trials in a Test Tube™*, and AV-101. All such costs are charged to expense as incurred.

*Stock-Based Compensation*

We account for stock-based payment arrangements in accordance with ASC 718, *Compensation-Stock Compensation* and ASC 505-50, *Equity-Equity Based Payments to Non-Employees* which requires the recognition of compensation expense, using a fair-value based method, for all costs related to stock-based payments including stock options and restricted stock awards. We recognize compensation cost for all share-based awards to employees based on their grant date fair value. Share-based compensation expense is recognized over the period during which the employee is required to perform service in exchange for the award, which generally represents the scheduled vesting period. We have no awards with market or performance conditions. For equity awards to non-employees, we re-measure the fair value of the awards as they vest and the resulting value is recognized as an expense during the period over which the services are performed.

We use the Black-Scholes option pricing model to estimate the fair value of stock-based awards as of the grant date. The Black-Scholes model is complex and dependent upon key data input estimates. The primary data inputs with the greatest degree of judgment are the expected terms of the stock options and the estimated volatility of our stock price. The Black-Scholes model is highly sensitive to changes in these two inputs. The expected term of the options represents the period of time that options granted are expected to be outstanding. We use the simplified method to estimate the expected term as an input into the Black-Scholes option pricing model. We determine expected volatility using the historical method, which, because of the limited period during which our stock has been publicly traded, is based on the historical daily trading data of the common stock of a peer group of public companies over the expected term of the option.

*Income Taxes*

We account for income taxes using the asset and liability approach for financial reporting purposes. We recognize deferred tax assets and liabilities for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. Valuation allowances are established, when necessary, to reduce the deferred tax assets to an amount expected to be realized.

*Recent Accounting Pronouncements*

See Note 3 to the consolidated financial statements included in Item 8 in this Annual Report on Form 10-K for information on recent accounting pronouncements.

**Results of Operations****Comparison of Years Ended March 31, 2014 and 2013***Revenue*

The following table compares our primary revenue sources between the periods (in \$000):

|                     | Fiscal Years Ended March 31, |        |
|---------------------|------------------------------|--------|
|                     | 2014                         | 2013   |
| NIH - AV-101 grant  | \$ -                         | \$ 187 |
| Subcontract revenue | -                            | 13     |
| Total Revenue       | \$ -                         | \$ 200 |

We have successfully completed our Phase I development of AV-101, our prodrug candidate for the treatment of neuropathic pain and, potentially, depression and other neurological conditions. Our NIH grant related to AV-101 expired in its normal course on June 30, 2012. We had drawn the maximum amount available under the grant prior to its expiration. Revenue associated with our earlier subcontract research arrangement terminated in May 2012.

*Research and Development Expense*

Research and development expense decreased by 28% to \$2.5 million in fiscal 2014 compared to \$3.4 million in fiscal 2013. The following table compares the primary components of research and development expense between the periods (in \$000):

|  | Fiscal Years Ended March 31, |          |
|--|------------------------------|----------|
|  | 2014                         | 2013     |
| Salaries and benefits                              | \$ 902                       | \$ 792   |
| Stock-based compensation                           | 453                          | 510      |
| UHN research under SRCA                            | 160                          | 466      |
| Consulting services                                | 53                           | 14       |
| Technology licenses and royalties                  | 484                          | 136      |
| Project-related third-party research and supplies: |                              |          |
| AV-101   | 51                           | 1,079    |
| All other including CardioSafe and LiverSafe       | 145                          | 293      |
|  | 196                          | 1,372    |
| Rent   | 185                          | 115      |
| Depreciation                                       | 44                           | 26       |
| All other  | 4                            | -        |
| Total Research and Development Expense             | \$ 2,481                     | \$ 3,431 |

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The increase in research and development salaries and benefits expense reflects the impact of (i) the addition of a research technician in April 2013; (ii) the partial restoration in April 2013 of an earlier voluntary salary reduction to below his contractual pay rates taken by our President and Chief Scientific Officer; and (iii) general annual increases in employee benefits costs. In addition to the ratable amortization of stock-based compensation expense over the requisite service period of the respective grants made in fiscal 2014 and in prior years, stock-based compensation expense for fiscal 2014 includes approximately \$82,000 as the impact of October 2013 and December 2013 modifications to reduce the exercise price of certain outstanding option grants to \$0.40 per share or \$0.50 per share, as well as approximately \$157,000 attributable to the expense resulting from the March 2014 and March 2013 grants of warrants to our President and Chief Scientific Officer that vest over three years, subject to certain vesting acceleration events. Stock-based compensation expense for fiscal 2013 includes approximately \$89,000 from the impact of October 2012 modifications reducing the exercise price to \$0.75 per share and reducing any remaining vesting period to two years for certain option grants having exercise prices between \$1.13 per share and \$2.58 per share made to certain scientific employees and consultants in prior years and approximately \$268,000 attributable to the expense resulting from the March 2013 grant of a warrant to our President and Chief Scientific Officer. Our 2012/2013 sponsored research project budget under the collaboration agreement with Dr. Gordon Keller's laboratory at UHN ended on September 30, 2013. We are currently in discussions with Dr. Keller and UHN regarding the scope of our 2013/2014 sponsored research project budget under the agreement, and we anticipate finalizing such budget in the near term. The expense recorded in fiscal 2013 reflects our stem cell research collaboration in accordance with our agreements with UHN made in the third and fourth quarters of our fiscal year ended March 31, 2012 and in a further modification effective beginning in October 2012. Technology license expense increased significantly in fiscal 2014 as a result of costs for patent prosecution and protection that we are required to fund under the terms of certain of our license agreements. We recognize these costs as they are invoiced to us by the licensors and they do not occur ratably throughout the year or between years. We began Phase 1b clinical trials of AV-101 early in calendar 2012, completing them by mid-year 2012. We recorded significant expense related to the trials during fiscal 2013. AV-101 expenses in fiscal 2014 reflect the costs associated with finalizing the AV-101 clinical trial results, preparing the final clinical trial and other reports required under the terms of the NIH grant and monitoring for feedback related to the reports, activities performed primarily through our contract research collaborator, Cato Research Ltd. We do not track internal research and development expenses, including compensation costs, by project as we do not currently believe that such project accounting is necessary given the level and overlap of project resources, including staffing, that are dedicated to our internal research and development projects. The increase in rent expense and depreciation in fiscal 2014 reflects increased rental costs and the amortization of tenant improvements related to our relocation to expanded facilities in late-July 2013.

*General and Administrative Expense*

General and administrative expense decreased by 29% to \$2.5 million in fiscal 2014 compared to \$3.6 million in fiscal 2013. The following table compares the primary components of general and administrative expense between the periods (in \$000):

|   | Fiscal Years Ended March 31, |          |
|---|------------------------------|----------|
|   | 2014                         | 2013     |
| Salaries and benefits                         | \$ 675                       | \$ 617   |
| Stock-based compensation                      | 684                          | 731      |
| Consulting Services                           | 94                           | 157      |
| Legal, accounting and other professional fees | 340                          | 554      |
| Investor relations                            | 120                          | 622      |
| Insurance                                     | 130                          | 122      |
| Travel and entertainment                      | 18                           | 37       |
| Rent and utilities                            | 139                          | 85       |
| Warrant modification expense                  | 205                          | 507      |
| All other expenses                            | 143                          | 130      |
| Total General and Administrative Expense      | \$ 2,548                     | \$ 3,562 |

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The increase in administrative salaries and benefits expense reflects the impact of (i) the partial restoration in April 2013 of an earlier voluntary salary reduction to below his contractual pay rate taken by our Chief Executive Officer; (ii) the September 2012 conversion of our Chief Financial Officer from part-time consultant to full-time employee status; (iii) the April 2013 conversion of an administrative assistant from consultant to employee status, and (iv) general annual increases in employee benefits costs; all offset by the impact of voluntary resignations of certain administrative personnel. In addition to the ratable amortization of stock-based compensation expense over the requisite service period of the respective grants made in fiscal 2014 and in prior years, stock-based compensation expense for fiscal 2014 includes approximately \$170,000 as the impact of October 2013 and December 2013 modifications to reduce the exercise price of certain outstanding option grants to \$0.40 per share or \$0.50 per share, as well as approximately \$299,000 attributable to the expense resulting from the March 2014 and March 2013 grants of warrants vesting over three years, subject to certain vesting acceleration events, to certain members of our senior management and to the independent members of our Board of Directors. Stock-based compensation expense for fiscal 2013 includes approximately \$44,000 reflecting the impact of October 2012 modifications reducing the exercise price to \$0.75 per share and reducing any remaining vesting period to two years for certain option grants having exercise prices between \$1.13 per share and \$2.58 per share made to certain administrative employees and consultants in prior years, and approximately \$535,000 attributable to the expense resulting from the March 2013 grants of warrants to certain members of our senior management and to the independent members of our Board of Directors. The reduction in legal, accounting and other professional fees reflects the impact of converting our Chief Financial Officer from part-time consultant to full-time employee status, as noted above, a reduction in legal expenses and the absence in fiscal 2014 of non-cash expense related to the granting of warrants to certain administrative consultants and service providers. During fiscal 2013, we engaged third parties to provide us with investor relations services and to conduct market awareness initiatives, however, for strategic purposes, we significantly scaled back those initiatives during fiscal 2014. The fiscal 2014 increase in rent and utilities expenses reflects higher costs related to our relocation to expanded facilities in late-July 2013. Warrant modification expense for fiscal 2014 reflects the impact of October 2013, December 2013 and February 2014 strategic reductions in the exercise price of certain outstanding warrants, generally from \$1.75 per share or \$1.50 per share, to \$0.50 per share, and in certain cases, the extension of the term of outstanding warrants by approximately one year. In fiscal 2013, we recorded warrant modification expense also related to the reduction of the exercise price of certain outstanding warrants. The increase in other expenses for 2013 includes one-time costs associated with our late-July 2013 relocation to new facilities.

*Other Expenses, Net*

In both fiscal 2014 and 2013, other expenses, net includes interest expense, including non-cash discount amortization, on our outstanding promissory notes, net of interest income, as well as the non-cash impact of changes in the fair value of the warrant liabilities related to warrants issued or issuable to Platinum as a result of the October 2012 Agreement with Platinum, as amended, and, in fiscal 2014, the warrant issued to Platinum in July 2013. In fiscal 2013, other expenses, net additionally includes the non-cash loss on extinguishment of debt resulting from the modification of indebtedness to Platinum, Morrison & Foerster, Cato Research Ltd., and University Health Network, as well as the conversion by the holders of our 12% Convertible Promissory Notes issued in February 2012 into restricted shares of our common stock and warrants in November 2012.

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The following table compares the primary components of net interest expense between the periods (in \$000):

|   | Fiscal Years Ended March 31, |        |
|---|------------------------------|--------|
|   | 2014                         | 2013   |
| Interest expense on promissory notes, including discount amortization   | \$ 1,547                     | \$ 796 |
| Charge for fair value of replacement warrants issued in connection with exercise of modified warrants                           | -                            | 36     |
| Charge related to losses on accounts payable settled by issuance of common stock or notes payable                               | -                            | 80     |
| Charge for investment banker warrants related to February 2012 Convertible promissory notes                                     | -                            | 28     |
| Charge for legal fees related to issuance of Senior Secured Promissory Notes to Platinum under June and October 2012 agreements | -                            | 59     |
| Other interest expense, including on capital leases and premium financing   | 15                           | 5      |
| Effect of foreign currency fluctuations on notes payable  | 1,562                        | 1,004  |
| Interest Income   | (49)                         | (53)   |
| Interest Income   | (10)                         | (30)   |
| Interest Expense, net   | \$ 1,503                     | \$ 921 |

The increase in interest expense is primarily attributable to the accrued interest and discount amortization recorded for the July 2012 through July 2013 issuances and restructuring of an aggregate of \$3.5 million of 10% senior secured convertible notes to Platinum, including the \$250,000 convertible note issued in July 2013, as well as the restructuring in September and October 2012 of an additional \$3.9 million of debt into new convertible notes to other service providers, including Morrison & Foerster, Cato Research Ltd., and University Health Network. These transactions are described in greater detail in Note 9, *Convertible Promissory Notes and Other Notes Payable*, in the Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K.

In conjunction with the issuance to Platinum, pursuant to the October 2012 Note Exchange and Purchase Agreement, of certain Senior Secured Convertible Promissory Notes and the related Exchange Warrant and Investment Warrants in October 2012, February 2013 and March 2013, and in connection with the similar senior secured convertible promissory note and related warrant issued to Platinum in July 2013, (as described more completely in Note 9, *Convertible Promissory Notes and Other Notes Payable*, in the Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K), and the contingent issuance of the Series A Exchange Warrant to Platinum upon Platinum's exchange of shares of our Series A Preferred Stock held by Platinum into shares of our common stock, we determined that the warrants included certain exercise price adjustment features requiring the warrants to be treated as liabilities. Accordingly, we recorded a non-cash warrant liability at its estimated fair value as of the date of warrant issuance or contract execution. During fiscal 2014, we recognized non-cash income of \$3,566,900 related to the net decrease in the estimated fair value of these liabilities since March 31, 2013, or issuance in the case of the warrant issued in July 2013, which resulted from a combination of both the decrease in the market price of our common stock during that period and an agreement with Platinum in May 2013 pursuant to which the stated exercise price of the warrants was reduced from \$1.50 per share to \$0.50 per share, and (ii). During fiscal 2013, we recognized non-cash expense of \$1,635,800 attributable to the net increase in the fair value of these liabilities between the issuance date of the warrants and March 31, 2013, primarily as the result of the increase in the market price of our common stock during that period.

During fiscal 2013, we recognized non-cash losses on the early extinguishment of debt in the aggregate amount of \$3.6 million primarily as a result of the restructuring of notes payable to Platinum and Cato Holding Company, and the restructuring of accounts payable to Cato Research, Ltd. and University Health Network that were converted into notes payable, as well as upon the conversion by the holders of our 12% Convertible Promissory Notes issued in February 2012 into restricted shares of our common stock and warrants, all of which were treated as extinguishment of debt for accounting purposes, all as described more completely in Note 9, *Convertible Promissory Notes and Other Notes Payable*, in the Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K.

In fiscal 2013, in connection with the October 2012 Note Exchange and Purchase Agreement we entered with Platinum, as described in Note 9, *Convertible Promissory Notes and Other Notes Payable*, and Note 10, *Capital Stock*, in the Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K, we recorded a non-cash deemed dividend of \$10.2 million as a result of the modification of the exchange rights for the Series A Preferred Stock held by Platinum and the related contingent issuance of a five-year warrant to purchase shares of our common stock upon Platinum's exercise of its Series A Preferred Stock exchange rights.

#### **Liquidity and Capital Resources**

Since our inception in May 1998 through March 31, 2014, we have financed our operations and technology acquisitions primarily through the issuance and sale of equity and debt securities, including convertible promissory notes and short-term promissory notes, for aggregate cash proceeds of approximately \$26.0 million, as well as from an aggregate of approximately \$16.4 million of government research grant awards, strategic collaboration payments and other revenues. Additionally, we have issued equity securities with an approximate aggregate value at issuance of \$12.6 million, primarily as compensation for professional services rendered to us since inception. At March 31, 2014, we had negligible cash and cash equivalents. To meet our cash needs and fund our working capital requirements after March 31, 2014 and prior to the expected completion of the Autilion Financing (described below) or an alternate debt- or equity-based financing, through June 19, 2014, we entered into securities purchase agreements with accredited investors pursuant to which we sold to such accredited investors certain Units for aggregate cash proceeds of \$1,465,000, consisting of: (i) 10% subordinate convertible promissory notes in the aggregate face amount of \$1,465,000 maturing on March 31, 2015; (ii) an aggregate of 1,465,000 restricted shares of our common stock; and (iii) warrants exercisable through December 31, 2016 to purchase an aggregate of 1,465,000 restricted shares of our common stock at an exercise price of \$0.50 per share. We anticipate that our cash expenditures during the next twelve months will be approximately \$4.0 to \$6.0 million.

In April 2013, we entered into the Securities Purchase Agreement with Autilion, under which Autilion is contractually obligated to purchase an aggregate of 72.0 million restricted shares of our common stock at a purchase price of \$0.50 per share for aggregate cash proceeds to us of \$36.0 million. To date, Autilion has completed only a nominal closing under the Securities Purchase Agreement. Therefore, Autilion is in default under the Securities Purchase Agreement, and we can provide no assurance that Autilion will complete a material closing under the Securities Purchase Agreement. In the event that Autilion does not complete a material closing under the Securities Purchase Agreement in the near term, we will need to obtain from \$4.0 million to \$6.0 million from alternative financing sources to execute our current business plan. Substantial additional financing may not be available to us on a timely basis, on terms acceptable to us, or at all. In the event we are unable to obtain substantial additional financing on a timely basis, our business, financial condition, and results of operations may be harmed, the price of our stock may decline, and we may not be able to continue as a going concern.

In the event Autilion completes a closing under the Securities Purchase Agreement in an amount exceeding \$13.0 million, and we issue to Autilion over 26 million shares of our restricted common stock in connection with such closing, Autilion will control in excess of 50% of our issued and outstanding common stock, resulting in a change in control of the Company. In addition, substantial dilution to existing stockholders will occur upon completion of a material portion of the Autilion Financing, or completion of an alternate equity-based financing.

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If and as necessary, we may seek to complete a combination of additional private placements or public offerings of our securities, which may include both debt and equity securities, stem cell technology-based research and development collaborations, stem cell technology and drug candidate license fees and government grant awards. Although we have been successful since May 1998 with raising sufficient capital for our operations, and we will continue to pursue additional financing opportunities as necessary to meet our business objectives, there can be no assurance that substantial additional capital will be available to us in sufficient amounts, on terms favorable to us, and without substantial dilution to our current stockholders, if at all. If we are unable to complete one or more private placements or public offerings, or otherwise obtain sufficient financing through strategic collaborations or government grant awards, we may be required to delay, scale back or discontinue certain drug rescue and/or research and development activities, and this may adversely affect our ability to continue as a going concern. If we obtain additional financing by selling our equity or debt securities, we anticipate that substantial dilution to our existing stockholders will result. Our future working capital requirements will depend on many factors, including, without limitation, the scope and nature of strategic opportunities related to our stem cell technology platform, including drug rescue and cell therapy research and development efforts, the success of such programs, our ability to obtain government grant awards and our ability to enter into strategic collaborations with institutions on terms acceptable to us. To further advance drug rescue applications of our stem cell technology platform, as well as support our operating activities, we plan to continue to carefully manage our monthly operating costs associated with salaries and benefits, regulatory and public company consulting, contract research and development, legal, accounting and other working capital costs.

The following table summarizes changes in cash and cash equivalents for the periods stated (in thousands):

|  | Fiscal Years Ended |            |
|--|--------------------|------------|
|  | March 31,          |            |
|  | 2014               | 2013       |
| Net cash used in operating activities                | \$ (2,126)         | \$ (3,463) |
| Net cash used in investing activities                | (10)               | (135)      |
| Net cash provided by financing activities            | 1,498              | 4,155      |
| Net increase (decrease) in cash and cash equivalents | (638)              | 557        |
| Cash and cash equivalents at beginning of period     | 638                | 81         |
| Cash and cash equivalents at end of period           | \$ -               | \$ 638     |

**Off-Balance Sheet Arrangements**

Other than contractual obligations incurred in the normal course of business, we do not have any off-balance sheet financing arrangements or liabilities, guarantee contracts, retained or contingent interests in transferred assets or any obligation arising out of a material variable interest in an unconsolidated entity. VistaGen California has two inactive, wholly-owned subsidiaries, Artemis Neuroscience, Inc., a Maryland corporation, and VistaStem Canada, Inc., an Ontario corporation.

**Item 7A. Quantitative and Qualitative Disclosures About Market Risk**

The disclosures in this section are not required since we qualify as a smaller reporting company.

**Item 8. Financial Statements and Supplementary Data**

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**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

To the Board of Directors and Stockholders  
VistaGen Therapeutics, Inc.  
(a development stage company)

We have audited the accompanying consolidated balance sheets of VistaGen Therapeutics, Inc. (a development stage company) as of March 31, 2014 and 2013 and the related consolidated statements of operations and comprehensive loss, cash flows, preferred stock, and stockholders' deficit for the years then ended, and for the period from May 26, 1998 (inception) through March 31, 2014. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. We were not engaged to perform an audit of the Company's internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of VistaGen Therapeutics, Inc. (a development stage company) at March 31, 2014 and 2013, and the consolidated results of its operations and its cash flows for the years then ended, and for the period from May 26, 1998 (inception) through March 31, 2014, in conformity with U.S. generally accepted accounting principles.

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 2 to the consolidated financial statements, the Company is a development stage company, has not yet generated sustainable revenues, has suffered recurring losses from operations and has a stockholders' deficit, all of which raise substantial doubt about its ability to continue as a going concern. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

/s/ OUM & CO. LLP

San Francisco, California  
June 23, 2014

**VISTAGEN THERAPEUTICS, INC.**  
(a development stage company)  
**CONSOLIDATED BALANCE SHEETS**  
(Amounts in dollars, except share amounts)

|  | <u>March 31,</u><br><u>2014</u> | <u>March 31,</u><br><u>2013</u> |
|--|---------------------------------|---------------------------------|
| <b>ASSETS</b>  |                                 |                                 |
| Current assets:  |                                 |                                 |
| Cash and cash equivalents  | \$ -                            | \$ 638,100                      |
| Prepaid expenses and other current assets  | 40,500                          | 33,700                          |
| Total current assets   | 40,500                          | 671,800                         |
| Property and equipment, net  | 176,300                         | 180,700                         |
| Security deposits and other assets   | 46,900                          | 29,000                          |
| Total assets   | <u>\$ 263,700</u>               | <u>\$ 881,500</u>               |
| <b>LIABILITIES AND STOCKHOLDERS' DEFICIT</b>   |                                 |                                 |
| Current liabilities:   |                                 |                                 |
| Accounts payable   | \$ 2,443,900                    | \$ 1,353,600                    |
| Accrued expenses   | 625,600                         | 342,900                         |
| Advance from officer   | 3,600                           | -                               |
| Current portion of notes payable and accrued interest  | 1,442,300                       | 617,200                         |
| Current portion of notes payable to related parties and accrued interest   | 290,400                         | 93,000                          |
| Convertible promissory notes and accrued interest, net of discount of \$697,400 at March 31, 2014  | 396,000                         | -                               |
| Capital lease obligations  | 3,900                           | 7,600                           |
| Total current liabilities  | <u>5,205,700</u>                | <u>2,414,300</u>                |
| Non-current liabilities:   |                                 |                                 |
| Senior secured convertible promissory notes, net of discount of \$2,085,900 at March 31, 2014 and \$1,963,100 at March 31, 2013 and accrued interest   | 1,929,800                       | 1,425,700                       |
| Notes payable, net of discount of \$848,100 at March 31, 2014 and \$1,142,600 at March 31, 2013 and accrued interest   | 1,797,600                       | 2,091,800                       |
| Notes payable to related parties, net of discount of \$103,200 at March 31, 2014 and \$147,200 at March 31, 2013 and accrued interest  | 1,057,100                       | 1,106,000                       |
| Warrant liability  | 2,973,900                       | 6,394,000                       |
| Deferred rent liability  | 97,400                          | -                               |
| Capital lease obligations  | 2,100                           | 6,100                           |
| Total non-current liabilities  | <u>7,857,900</u>                | <u>11,023,600</u>               |
| Total liabilities  | <u>13,063,600</u>               | <u>13,437,900</u>               |
| Commitments and contingencies  |                                 |                                 |
| Stockholders' deficit:   |                                 |                                 |
| Preferred stock, \$0.001 par value; 10,000,000 shares, including 500,000 Series A shares, authorized at March 31, 2014 and 2013; 500,000 Series A shares issued and outstanding at March 31, 2014 and 2013 | 500                             | 500                             |
| Common stock, \$0.001 par value; 200,000,000 shares authorized at March 31, 2014 and 2013; 26,200,185 and 23,480,169 shares issued at March 31, 2014 and March 31, 2013, respectively                      | 26,200                          | 23,500                          |
| Additional paid-in capital   | 61,976,500                      | 59,266,000                      |
| Treasury stock, at cost, 2,713,308 shares of common stock held at March 31, 2014 and 2013  | (3,968,100)                     | (3,968,100)                     |
| Note receivable from sale of common stock  | (198,100)                       | (209,100)                       |
| Deficit accumulated during development stage   | (70,636,900)                    | (67,669,200)                    |
| Total stockholders' deficit  | <u>(12,799,900)</u>             | <u>(12,556,400)</u>             |
| Total liabilities and stockholders' deficit  | <u>\$ 263,700</u>               | <u>\$ 881,500</u>               |

See accompanying notes to consolidated financial statements.

**VISTAGEN THERAPEUTICS, INC.**  
(a development stage company)  
**CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS**  
(Amounts in dollars, except share amounts)

|   | Fiscal Years Ended<br>March 31, |                        | May 26, 1998<br>(Inception)<br>Through<br>March 31,<br>2014 |
|---|---------------------------------|------------------------|---|
|   | 2014                            | 2013                   | 2014  |
| Revenues:   |                                 |                        |   |
| Grant revenue   | \$ -                            | \$ 200,400             | \$ 12,963,100   |
| Collaboration revenue   | -                               | -                      | 2,283,600   |
| Other   | -                               | -                      | 1,123,500   |
| Total revenues  | <u>-</u>                        | <u>200,400</u>         | <u>16,370,200</u>   |
| Operating expenses:   |                                 |                        |   |
| Research and development  | 2,480,600                       | 3,430,800              | 32,036,300  |
| Acquired in-process research and development                          | -                               | -                      | 7,523,200   |
| General and administrative  | 2,548,300                       | 3,562,700              | 33,229,400  |
| Total operating expenses  | <u>5,028,900</u>                | <u>6,993,500</u>       | <u>72,788,900</u>   |
| Loss from operations  | (5,028,900)                     | (6,793,100)            | (56,418,700)  |
| Other expenses, net:  |                                 |                        |   |
| Interest expense, net   | (1,503,000)                     | (920,700)              | (11,865,200)  |
| Change in warrant and put and note extension option liabilities       | 3,566,900                       | (1,635,800)            | 2,349,600   |
| Loss on early extinguishment of debt                                  | -                               | (3,567,800)            | (4,761,300)   |
| Other income  | -                               | 34,400                 | 81,900  |
| Loss before income taxes  | (2,965,000)                     | (12,883,000)           | (70,613,700)  |
| Income taxes  | (2,700)                         | (3,700)                | (23,200)  |
| Net loss  | <u>(2,967,700)</u>              | <u>(12,886,700)</u>    | <u>(70,636,900)</u>   |
| Deemed dividend on Series A Preferred stock                           | -                               | (10,193,200)           | (10,193,200)  |
| Net loss attributable to common stockholders                          | <u>\$ (2,967,700)</u>           | <u>\$ (23,079,900)</u> | <u>\$ (80,830,100)</u>                                      |
| Basic net loss attributable to common stockholders per common share   | <u>\$ (0.14)</u>                | <u>\$ (1.27)</u>       |   |
| Diluted net loss attributable to common stockholders per common share | <u>\$ (0.19)</u>                | <u>\$ (1.27)</u>       |   |
| Weighted average shares used in computing:                            |                                 |                        |   |
| Basic net loss attributable to common stockholders per common share   | <u>21,973,149</u>               | <u>18,108,444</u>      |   |
| Diluted net loss attributable to common stockholders per common share | <u>21,973,149</u>               | <u>18,108,444</u>      |   |
| Comprehensive loss  | <u>\$ (2,967,700)</u>           | <u>\$ (12,886,700)</u> | <u>\$ (70,636,900)</u>                                      |

See accompanying notes to consolidated financial statements.

**VISTAGEN THERAPEUTICS, INC.**  
(a development stage company)  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**  
(Amounts in dollars)

|   | Fiscal Years Ended March 31, |                    | Period From   |
|---|------------------------------|--------------------|---|
|   | 2014                         | 2013               | May 26, 1998<br>(Inception) Through<br>March 31, 2014 |
| <b>Cash flows from operating activities:</b>  |                              |                    |   |
| Net loss  | \$ (2,967,700)               | \$ (12,886,700)    | \$ (70,636,900)                                       |
| Adjustments to reconcile net loss to net cash used in operating activities:                                 |                              |                    |   |
| Depreciation and amortization   | 54,600                       | 33,800             | 832,100   |
| Amortization of discounts on convertible and promissory notes   | 640,000                      | 254,800            | 5,315,500   |
| Change in warrant liability and put and note term extension option liabilities                              | (3,566,900)                  | 1,635,800          | (2,349,700)   |
| Stock-based compensation  | 1,137,300                    | 1,241,300          | 6,732,900   |
| Expense related to modification of warrants   | 204,300                      | 508,200            | 1,454,200   |
| Non-cash rent and relocation expense  | 56,800                       | -                  | 56,800  |
| Interest income on note receivable for stock purchase   | (1,200)                      | (27,600)           | (28,800)  |
| Fair value of common stock granted for services following the Merger  | -                            | 340,000            | 852,700   |
| Fair value of warrants granted for services and interest following the Merger                               | 60,700                       | 183,800            | 748,300   |
| Gain on currency fluctuation  | (48,600)                     | (53,000)           | (101,600)   |
| Fair value of additional warrants granted pursuant to exercises of modified warrants                        | -                            | 35,900             | 174,000   |
| Loss on settlements of accounts payable   | -                            | 78,300             | 78,300  |
| Acquired in-process research and development  | -                            | -                  | 7,523,200   |
| Loss on early extinguishment of debt  | -                            | 3,567,800          | 4,761,300   |
| Fair value of Series C preferred stock, common stock, and warrants granted for services prior to the Merger | -                            | -                  | 3,150,900   |
| Fair value of common stock issued for note term modification  | -                            | -                  | 22,400  |
| Consulting services by related parties settled by issuing promissory notes                                  | -                            | -                  | 44,600  |
| Gain on sale of assets  | -                            | -                  | (16,800)  |
| Changes in operating assets and liabilities:  |                              |                    |   |
| Unbilled contract payments receivable   | -                            | 106,200            | -   |
| Prepaid expenses and other current assets   | 92,700                       | 46,200             | 134,400   |
| Security deposits and other assets  | (17,900)                     | -                  | (46,900)  |
| Accounts payable and accrued expenses, including accrued interest   | 2,229,900                    | 1,485,200          | 18,201,400  |
| Deferred revenues   | -                            | (13,200)           | -   |
| Net cash used in operating activities   | <u>(2,126,000)</u>           | <u>(3,463,200)</u> | <u>(23,097,700)</u>                                   |
| <b>Cash flows from investing activities:</b>  |                              |                    |   |
| Purchases of equipment, net   | (9,600)                      | (135,400)          | (825,800)   |
| Net cash used in investing activities   | <u>(9,600)</u>               | <u>(135,400)</u>   | <u>(825,800)</u>                                      |
| <b>Cash flows from financing activities:</b>  |                              |                    |   |
| Net proceeds from issuance of common stock and warrants, including Units                                    | 1,075,500                    | 1,185,100          | 5,060,600   |
| Proceeds from exercise of modified warrants   | 264,200                      | 262,100            | 1,692,600   |
| Net proceeds from issuance of Platinum notes and warrants   | 250,000                      | 3,222,100          | 7,172,100   |
| Advance from officer  | 64,000                       | -                  | 64,000  |
| Proceeds from issuance of notes under line of credit  | -                            | -                  | 200,000   |
| Proceeds from issuance of 7% note payable to founding stockholder   | -                            | -                  | 90,000  |
| Net proceeds from issuance of 7% convertible notes  | -                            | -                  | 575,000   |
| Net proceeds from issuance of 10% convertible notes and warrants  | -                            | -                  | 1,655,000   |
| Net proceeds from issuance of preferred stock and warrants  | -                            | -                  | 4,198,600   |
| Net proceeds from issuance of notes and warrants from 2006 to 2010  | -                            | -                  | 4,851,800   |
| Net proceeds from issuance of February 2012 12% convertible notes and warrants                              | -                            | -                  | 466,500   |
| Repayment of capital lease obligations  | (7,600)                      | (16,900)           | (125,000)   |
| Repayment of notes  | (148,600)                    | (496,700)          | (1,977,700)   |
| Net cash provided by financing activities   | <u>1,497,500</u>             | <u>4,155,700</u>   | <u>23,923,500</u>                                     |
| Net (decrease) increase in cash and cash equivalents  | (638,100)                    | 557,100            | -   |
| Cash and cash equivalents at beginning of period  | 638,100                      | 81,000             | -   |
| Cash and cash equivalents at end of period  | <u>\$ -</u>                  | <u>\$ 638,100</u>  | <u>\$ -</u>   |
| <b>Supplemental disclosure of cash flow activities:</b>   |                              |                    |   |
| Cash paid for interest  | \$ 21,000                    | \$ 225,900         | \$ 686,600  |
| Cash paid for income taxes  | \$ 2,700                     | \$ 3,700           | \$ 23,200   |

**VISTAGEN THERAPEUTICS, INC.**  
(a development stage company)  
**CONSOLIDATED STATEMENTS OF CASH FLOWS (continued)**  
(Amounts in dollars, except share amounts)

|   | Twelve Months Ended March 31, |              | Period From  |
|---|-------------------------------|--------------|--|
|   | 2014                          | 2013         | May 26, 1998<br>(Inception)<br>Through<br>March 31, 2014 |
| Supplemental disclosure of noncash activities:  |                               |              |  |
| Forgiveness of accrued compensation and accrued interest payable to officers transferred to equity  | \$ -                          | \$ -         | \$ 800,000   |
| Exercise of warrants and options in exchange for debt cancellation  | \$ -                          | \$ -         | \$ 112,800   |
| Settlement of accrued and prepaid interest by issuance of Series C Preferred Stock  | \$ -                          | \$ -         | \$ 35,300  |
| Conversion of 10% notes payable, net of discount, and related accrued interest of \$408,600 into Series C Preferred stock   | \$ -                          | \$ -         | \$ 2,050,300   |
| Issuance of Series B-1 Preferred stock for acquired in-process research and development   | \$ -                          | \$ -         | \$ 7,523,200   |
| Conversion of 7% notes payable, net of discount, and related accrued interest of \$3,800 into Series B Preferred stock  | \$ -                          | \$ -         | \$ 508,000   |
| Conversion of accounts payable into convertible promissory notes  | \$ -                          | \$ -         | \$ 893,700   |
| Conversion of accounts payable into note payable  | \$ -                          | \$ 1,558,500 | \$ 4,368,800   |
| Conversion of accounts payable into common stock  | \$ -                          | \$ 103,200   | \$ 1,927,300   |
| Conversion of accrued interest on convertible promissory notes into common stock  | \$ -                          | \$ -         | \$ 921,400   |
| Notes receivable from sale of common stock to related parties upon exercise of options and warrants   | \$ -                          | \$ -         | \$ 149,800   |
| Capital lease obligations   | \$ -                          | \$ -         | \$ 139,700   |
| Recognition of put option and note term extension option liabilities upon issuance of Original Platinum Notes   | \$ -                          | \$ -         | \$ 141,200   |
| Incremental fair value of put option and note term extension option liabilities from debt modifications   | \$ -                          | \$ -         | \$ 479,400   |
| Incremental fair value of note conversion option from debt modification   | \$ -                          | \$ -         | \$ 1,891,200   |
| Incremental fair value of warrant from debt modifications   | \$ -                          | \$ -         | \$ 276,700   |
| Recognition of warrant liability upon adoption of new accounting standard   | \$ -                          | \$ -         | \$ 151,300   |
| Fair value of warrants issued with August 2010 short term notes   | \$ -                          | \$ -         | \$ 130,900   |
| Note discount upon issuance of August 2010 short term notes   | \$ -                          | \$ -         | \$ 320,000   |
| Fair value of warrants issued with February 2012 12 % convertible notes   | \$ -                          | \$ -         | \$ 542,000   |
| Note discount upon issuance of February 2012 12% convertible notes  | \$ -                          | \$ -         | \$ 495,200   |
| Conversion of 2006/2007 and 2008/2010 Notes into Units, including accrued interest of \$1,365,600   | \$ -                          | \$ -         | \$ 6,174,800   |
| Conversion of all series of pre-Merger preferred stock into Units   | \$ -                          | \$ -         | \$ 14,534,800  |
| Conversion of 2011 Platinum Note into Series A Preferred Stock, including accrued interest of \$611,100 and conversion premium  | \$ -                          | \$ -         | \$ 5,763,900   |
| Conversion of 7% note payable and accrued interest of \$11,500 into common stock and warrants   | \$ -                          | \$ -         | \$ 19,500  |
| Conversion of accounts payable to Morrison & Foerster, McCarthy Tétrault and Desjardins into notes payable  | \$ -                          | \$ -         | \$ 1,603,400   |
| Accounts payable and cancellation premium converted into 2011 Private Placement Units   | \$ -                          | \$ -         | \$ 169,000   |
| Accrued interest on Cato Holding Company note converted to note payable   | \$ -                          | \$ -         | \$ 90,800  |
| Accounts payable settled in December 2011 and May/June 2012 warrant exercises   | \$ -                          | \$ 12,500    | \$ 280,100   |
| Insurance premiums settled by issuing note payable  | \$ 98,300                     | \$ 110,100   | \$ 296,900   |
| Conversion of accrued interest and fees on February 2012 Notes into 2012 Private Placement Units  | \$ -                          | \$ 92,900    | \$ 92,900  |
| Accrued interest on July and August 2012 Notes to Platinum converted into Exchange Note   | \$ -                          | \$ 22,600    | \$ 22,600  |
| Accounts payable settled by issuance of stock or notes payable and stock  | \$ -                          | \$ 104,900   | \$ 104,900   |
| Accounts payable converted into 2012 Private Placement Units  | \$ -                          | \$ 50,000    | \$ 50,000  |
| Recognition of warrant liability upon issuance to Platinum of October 2012 Exchange Note and October 2012, February 2013 and March 2013 Investment Notes and July 2013 Convertible Note | \$ 146,800                    | \$ 1,690,000 | \$ 1,836,800   |
| Recognition of warrant liability for potential issuance to Platinum of Series A Exchange Warrant under the terms of the October 2012 Agreement  | \$ -                          | \$ 3,068,200 | \$ 3,068,200   |

See accompanying notes to consolidated financial statements.

**VISTAGEN THERAPEUTICS, INC.**  
(a development stage company)  
**CONSOLIDATED STATEMENTS OF PREFERRED STOCK**  
Period from May 26, 1998 (inception) through March 31, 2014  
(Amounts in dollars, except share amounts)

|  | Preferred<br>Stock<br>(Shares) | Series A<br>Preferred<br>Stock | Series B<br>Preferred<br>Stock | Series B-1<br>Preferred<br>Stock | Series C<br>Preferred<br>Stock | Total<br>Preferred<br>Stock |
|--|--------------------------------|--------------------------------|--------------------------------|----------------------------------|--------------------------------|-----------------------------|
| Balances at May 26, 1998 (inception)   | -                              | -                              | -                              | -                                | -                              | -                           |
| Issuance of Series A preferred stock at \$2.302 per share for cash, net of issuance costs of \$29,500  | 431,930                        | 964,700                        | -                              | -                                | -                              | 964,700                     |
| Issuance of Series B preferred stock at \$5.545 per share for cash, including conversion of \$575,000 face value of 7% convertible notes plus accrued interest of \$3,800, net of unamortized note discount of \$70,800 and issuance costs of \$137,000    | 515,568                        | -                              | 2,651,100                      | -                                | -                              | 2,651,100                   |
| Issuance of Series B-1 preferred stock at \$5.545 per share for acquired in-process research and development   | 1,356,750                      | -                              | -                              | 7,523,200                        | -                              | 7,523,200                   |
| Issuance of Series C preferred stock at \$6.00 per share for cash, including conversion of \$1,655,000 face value of 10% convertible notes plus accrued interest of \$408,600, net of unamortized note discount of \$13,200 and issuance costs of \$47,900 | 533,658                        | -                              | -                              | -                                | 3,140,800                      | 3,140,800                   |
| Issuance of Series C preferred stock at \$6.00 per share for services and in payment of interest on line of credit   | 46,749                         | -                              | -                              | -                                | 280,500                        | 280,500                     |
| Proceeds allocated to warrants issued in connection with Series C preferred stock  | -                              | -                              | -                              | -                                | (25,500)                       | (25,500)                    |
| Balances at March 31, 2006 through March 31, 2011  | 2,884,655                      | 964,700                        | 2,651,100                      | 7,523,200                        | 3,395,800                      | 14,534,800                  |
| Conversion of all series of VistaGen California preferred stock into common stock at May 11, 2011 in connection with the Merger  | (2,884,655)                    | (964,700)                      | (2,651,100)                    | (7,523,200)                      | (3,395,800)                    | (14,534,800)                |
| Balances at May 11, 2011 through March 31, 2014  | -                              | -                              | -                              | -                                | -                              | -                           |

See accompanying notes to consolidated financial statements.



|  |                |               |                   |                  |                      |                       |                     |                        |                       |
|--|----------------|---------------|-------------------|------------------|----------------------|-----------------------|---------------------|------------------------|-----------------------|
| (including modification of Platinum Note)  | -              | -             | -                 | -                | 1,028,900            | -                     | -                   | -                      | 1,028,900             |
| Platinum Note warrants under FY 2012 Discounted Warrant Exercise Program   | -              | -             | -                 | -                | 138,100              | -                     | -                   | -                      | 138,100               |
| Stock issued in Fall 2011 Follow-on Offering   | -              | -             | 63,570            | 100              | 111,200              | -                     | -                   | -                      | 111,300               |
| Stock issued upon exercise of options from the 1999 Stock Incentive Plan   | -              | -             | 113,979           | 100              | 102,100              | -                     | -                   | -                      | 102,200               |
| Fair value of stock issued for services following the Merger   | -              | -             | 155,555           | 200              | 451,800              | -                     | -                   | -                      | 452,000               |
| Fair value of warrants issued for services   | -              | -             | -                 | -                | 564,500              | -                     | -                   | -                      | 564,500               |
| Proceeds allocated to warrants issued and beneficial conversion feature in connection with 12% convertible notes | -              | -             | -                 | -                | 461,700              | -                     | -                   | -                      | 461,700               |
| Stock issued in connection with note term extension  | -              | -             | 8,000             | -                | 22,400               | -                     | -                   | -                      | 22,400                |
| Stock issued upon conversion of Platinum Note to equity (net of Platinum warrant exercise reflected above)       | 231,090        | 200           | -                 | -                | 3,387,700            | -                     | -                   | -                      | 3,387,900             |
| Common stock exchanged for Series A Preferred under agreements with Platinum: Common Stock Exchange Agreement    | 45,980         | -             | -                 | -                | 750,600              | (750,600)             | -                   | -                      | -                     |
| Note and Warrant Exchange Agreement  | 159,985        | 200           | -                 | -                | 2,480,900            | (2,481,100)           | -                   | -                      | -                     |
| Net loss for fiscal year 2012  | -              | -             | -                 | -                | -                    | -                     | -                   | (12,209,500)           | (12,209,500)          |
| <b>Balances at March 31, 2012</b>  | <b>437,055</b> | <b>\$ 400</b> | <b>18,704,267</b> | <b>\$ 18,700</b> | <b>\$ 52,539,500</b> | <b>\$ (3,231,700)</b> | <b>\$ (250,000)</b> | <b>\$ (54,782,500)</b> | <b>\$ (5,705,600)</b> |





|   |                |               |                   |                  |                      |                       |                     |                        |                        |
|---|----------------|---------------|-------------------|------------------|----------------------|-----------------------|---------------------|------------------------|------------------------|
| Research Ltd. and University Health Network in connection with accrued interest on underlying notes | -              | -             | -                 | -                | 60,800               | -                     | -                   | -                      | 60,800                 |
| Net loss for fiscal year 2014   | -              | -             | -                 | -                | -                    | -                     | -                   | (2,967,700)            | (2,967,700)            |
| <b>Balances at March 31, 2014</b>   | <b>500,000</b> | <b>\$ 500</b> | <b>26,200,185</b> | <b>\$ 26,200</b> | <b>\$ 61,976,500</b> | <b>\$ (3,968,100)</b> | <b>\$ (198,100)</b> | <b>\$ (70,636,900)</b> | <b>\$ (12,799,900)</b> |

See accompanying notes to consolidated financial statements.

VISTAGEN THERAPEUTICS, INC.  
(a development stage company)

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

**1. Description of Business**

VistaGen Therapeutics, Inc., a Nevada corporation (“*VistaGen*” or the “*Company*”), is a biotechnology company with expertise in human pluripotent stem cell technology. The Company is applying and developing its stem cell technology for drug rescue and regenerative medicine. The Company’s primary focus is on leveraging its stem cell technology platform, which it refers to as *Human Clinical Trials in a Test Tube*<sup>™</sup>, the human cells it produces, its novel, human cell-based bioassay systems, and medicinal chemistry to produce small molecule *Drug Rescue Variants*. These are new, safer variants of promising small molecule drug candidates previously discovered, developed and ultimately discontinued by pharmaceutical companies and others, after substantial investment and prior to market approval, due to unexpected heart or liver safety concerns. The Company refers to these promising drug candidates that are now potentially suitable for drug rescue as *Drug Rescue Candidates*. These *Drug Rescue Candidates* have already been tested extensively and validated by a pharmaceutical or biotechnology company for their therapeutic (efficacy) and commercial potential. The key commercial objective of the Company’s drug rescue strategy is to generate revenue from license, development and commercialization arrangements involving new, safer and proprietary *Drug Rescue Variants* that it produces with its contract medicinal chemistry collaborator and validates internally in its human cell-based bioassay systems prior to license. The Company anticipates that each validated lead *Drug Rescue Variant* will be suitable as a promising drug development program, either internally or in collaboration with a strategic partner. Through stem cell technology-based drug rescue, the Company intends to become a leading source of proprietary, small molecule drug candidates to the global pharmaceutical industry.

In parallel with its drug rescue activities, the Company is also interested in exploring ways to leverage its stem cell technology platform for regenerative medicine purposes, with emphasis on developing novel human disease models for discovery of small molecule drugs and biologics with regenerative and therapeutic potential. The Company’s regenerative medicine focus would be based on its expertise in human biology and differentiation of human pluripotent stem cells to develop functional adult human cells and tissues involved in human disease, including blood, bone, cartilage, heart, liver and insulin-producing pancreatic beta-islet cells. Among its key objectives will be to explore regenerative medicine opportunities through pilot nonclinical proof-of-concept studies, after which the Company intends to assess any potential opportunities for further development and commercialization of therapeutically and commercially promising regenerative medicine programs, either on its own or with strategic partners.

AV-101 is VistaGen’s orally-available, small molecule prodrug candidate which has successfully completed Phase 1 clinical development in the United States for treatment of neuropathic pain, a serious and chronic condition causing pain after an injury or disease of the peripheral or central nervous system that affects millions of people worldwide. The NIH awarded VistaGen approximately \$8.8 million for preclinical and Phase 1 clinical development of AV-101. The Company intends to pursue potential opportunities for further clinical development and commercialization of AV-101 for neuropathic pain, epilepsy and depression, on its own and with strategic partners. In the event that it successfully completes a strategic partnering arrangement for AV-101, the Company plans to use the net proceeds from such an arrangement to expand its stem cell technology-based drug rescue and regenerative medicine programs.

VistaGen is in the development stage and, since inception, has devoted substantially all of its time and efforts to human pluripotent stem cell technology research and development, including, among other things, bioassay system development, small molecule drug development, creating, protecting and patenting intellectual property, recruiting personnel and raising working capital.

## **The Merger**

VistaGen Therapeutics, Inc., a California corporation incorporated on May 26, 1998 (“*VistaGen California*”), is a wholly-owned subsidiary of the Company. Excaliber Enterprises, Ltd. (“*Excaliber*”), a publicly-held company (formerly OTCBB: EXCA) was incorporated under the laws of the State of Nevada on October 6, 2005. Pursuant to a strategic merger transaction on May 11, 2011, Excaliber acquired all outstanding shares of VistaGen California in exchange for 6,836,452 shares of the Company’s common stock and assumed all of VistaGen California’s pre-Merger obligations (the “*Merger*”). Shortly after the Merger, Excaliber’s name was changed to “VistaGen Therapeutics, Inc.” (a Nevada corporation).

VistaGen California, as the accounting acquirer in the Merger, recorded the Merger as the issuance of common stock for the net monetary assets of Excaliber, accompanied by a recapitalization. The accounting treatment for the Merger was identical to that resulting from a reverse acquisition, except that the Company recorded no goodwill or other intangible assets. A total of 1,569,000 shares of common stock, representing the shares held by stockholders of Excaliber immediately prior to the Merger and effected for a post-Merger two-for-one (2:1) stock split, have been retroactively reflected as outstanding for all periods presented in the accompanying Consolidated Financial Statements of the Company. Additionally, the accompanying Consolidated Balance Sheets of the Company retroactively reflect the \$0.001 par value of Excaliber’s common stock.

In October 2011, the Company’s stockholders amended the Company’s Articles of Incorporation to authorize the Company to issue up to 200 million shares of common stock and up to 10 million shares of preferred stock and to authorize the Company’s Board of Directors to prescribe the classes, series and the number of each class or series of preferred stock and the voting powers, designations, preferences, limitations, restrictions and relative rights of each class or series of preferred stock. In December 2011, the Company’s Board of Directors authorized the creation of a series of up to 500,000 shares of Series A Preferred Stock, par value \$0.001 (“*Series A Preferred*”), all of which are held by Platinum Long Term Growth VII, LLC (“*Platinum*”), currently the Company’s largest institutional security holder. Pursuant to the Note Exchange and Purchase Agreement of October 11, 2012, as amended, between the Company and Platinum, Platinum has the right and option to exchange the 500,000 shares of the Company’s Series A Preferred it holds for (i) 15,000,000 restricted shares of the Company’s common stock, and (ii) a five-year warrant to purchase 7,500,000 restricted shares of the Company’s common stock at an exercise price of \$0.50 per share (see Note 10, *Capital Stock*).

The Consolidated Financial Statements of the Company in this Report represent the activity of VistaGen California from May 26, 1998, and the consolidated activity of VistaGen California and Excaliber (now VistaGen Therapeutics, Inc., a Nevada corporation), from May 11, 2011 (the date of the Merger). The Consolidated Financial Statements of the Company included in this Report also include the accounts of VistaGen California’s two wholly-owned subsidiaries, Artemis Neuroscience, Inc., a Maryland corporation (“*Artemis*”), and VistaStem Canada, Inc., a corporation organized under the laws of Ontario, Canada (“*VistaStem Canada*”).

## **2. Basis of Presentation and Going Concern**

The accompanying Consolidated Financial Statements of the Company have been prepared assuming the Company will continue as a going concern. As a development stage company without sustainable revenues, VistaGen has experienced recurring losses and negative cash flows from operations. From inception through March 31, 2014, VistaGen has a deficit accumulated during its development stage of \$70.6 million. The Company expects these conditions to continue for the foreseeable future as it expands its *Human Clinical Trials in a Test Tube*™ platform and executes its drug rescue programs and, potentially, regenerative medicine programs.

Since its inception in May 1998 and through March 2014, the Company has financed its operations and technology acquisitions primarily through the issuance and sale of equity and debt securities, including convertible promissory notes and short-term promissory notes, for aggregate cash proceeds of approximately \$26.0 million, as well as from an aggregate of approximately \$16.4 million of government research grant awards, strategic collaboration payments and other revenues. Additionally, during the same period, the Company has issued equity securities with an approximate aggregate value at issuance of \$12.6 million in non-cash settlements of certain liabilities, including liabilities for professional services rendered to the Company or as compensation for such services. At March 31, 2014, the Company did not have sufficient cash or cash equivalents to enable it to fund its operations, including expected cash expenditures of approximately \$5 million, through the next twelve months. To meet its cash needs and fund its working capital requirements after March 31, 2014 and prior to a debt- or equity-based financing, through June 19, 2014, the Company entered into securities purchase agreements with accredited investors and institutions pursuant to which it sold to such accredited investors units of our securities ("Units"), for aggregate proceeds of \$1,465,000, consisting of: (i) 10% subordinate convertible promissory notes in the aggregate face amount of \$1,465,000 maturing on March 31, 2015; (ii) an aggregate of 1,465,000 restricted shares of its common stock; and (iii) warrants exercisable through December 31, 2016 to purchase an aggregate of 1,465,000 restricted shares of its common stock at an exercise price of \$0.50 per share.

In April 2013, the Company entered into a Securities Purchase Agreement (as amended, "*Securities Purchase Agreement*") with Autilion AG, a company organized and existing under the laws of Switzerland ("*Autilion*"), under which Autilion is contractually obligated to purchase an aggregate of 72.0 million restricted shares of the Company's common stock at a purchase price of \$0.50 per share for aggregate cash proceeds to the Company of \$36.0 million (the "*Autilion Financing*"). To date, Autilion has completed only a nominal closing under the Securities Purchase Agreement. Therefore, Autilion is in default under the Securities Purchase Agreement, and the Company can provide no assurance that Autilion will complete a material closing under the Securities Purchase Agreement. In the event that Autilion does not complete a material portion of the Autilion Financing pursuant to the Securities Purchase Agreement in the near term, the Company will need to obtain from \$4.0 million to \$6.0 million from alternative financing sources to execute its business plan over the next twelve to fifteen months. Substantial additional financing may not be available to the Company on a timely basis, on acceptable terms, or at all. In the event the Company is unable to obtain substantial additional financing on a timely basis, its business, financial condition, and results of operations may be harmed, the price of its stock may decline, and it may not be able to continue as a going concern.

To meet its working capital needs during the fiscal year ended March 31, 2014, the Company issued an additional Senior Secured Convertible Promissory Note to Platinum, and sold Units consisting of convertible promissory notes, shares of its restricted common stock and warrants to purchase restricted shares of its common stock, to accredited investors in private placements as described more completely in Note 9, *Convertible Promissory Notes and Other Notes Payable*, and Note 10, *Capital Stock*. To provide working capital for operations from March 31, 2014 through the date of this report, the Company completed private placements of its securities to Platinum and other accredited investors resulting in aggregate cash proceeds of \$1,465,000, as described in Note 17, *Subsequent Events*.

To the extent necessary, the Company may also seek to meet its future cash needs and fund its working capital requirements through a combination of additional private placements of its securities, which may include both debt and equity securities, research and development collaborations, license fees, and government grant awards. Alternatively, the Company may seek to raise additional capital through a registered public offering of its securities. In May 2014, the Company filed a Registration Statement on Form S-1 with the Securities and Exchange Commission covering the potential sale of shares of its common stock in a registered public offering. Additionally, the Company believes that its participation in strategic collaborations, including licensing transactions, may provide additional cash in support of its future working capital requirements. If the Company is unable to obtain sufficient financing from the Autilion Financing or alternative sources, it may be required to reduce, defer, or discontinue certain of its research and development activities or it may not be able to continue as a going concern. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

### 3. Summary of Significant Accounting Policies

#### *Use of Estimates*

The preparation of financial statements in conformity with U.S. generally accepted accounting principles (“U.S. GAAP”) requires management 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 financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. Significant estimates include, but are not limited to, those relating to stock-based compensation, revenue recognition, and the assumptions used to value warrants, warrant modifications and warrant liabilities.

#### *Principles of Consolidation*

The accompanying consolidated financial statements include the Company’s accounts, and the accounts of VistaGen California’s wholly-owned inactive subsidiaries, Artemis Neurosciences and VistaStem Canada.

#### *Cash and Cash Equivalents*

Cash and cash equivalents are considered to be highly liquid investments with maturities of three months or less at the date of purchase.

#### *Property and Equipment*

Property and equipment is stated at cost. Repairs and maintenance costs are expensed in the period incurred. Depreciation is calculated using the straight-line method over the estimated useful lives of the assets. The estimated useful lives of property and equipment range from five to seven years.

#### *Impairment or Disposal of Long-Lived Assets*

The Company evaluates its long-lived assets, primarily property and equipment, for impairment whenever events or changes in circumstances indicate that their carrying value may not be recoverable from the estimated future cash flows expected to result from their use or eventual disposition. If the estimates of future undiscounted net cash flows are insufficient to recover the carrying value of the assets, the Company records an impairment loss in the amount by which the carrying value of the assets exceeds their fair value. If the assets are determined to be recoverable, but the useful lives are shorter than originally estimated, the Company depreciates or amortizes the net book value of the assets over the newly determined remaining useful lives. The Company has not recorded any impairment charges to date.

#### *Revenue Recognition*

Although the Company does not currently have any such arrangements, it has historically generated revenue principally from collaborative research and development arrangements, technology transfer agreements, including strategic licenses, and government grants. Revenue arrangements with multiple components are divided into separate units of accounting if certain criteria are met, including whether the delivered component has stand-alone value to the customer. Consideration received is allocated among the separate units of accounting based on their respective selling prices. The selling price for each unit is based on vendor-specific objective evidence, or VSOE, if available, third party evidence if VSOE is not available, or estimated selling price if neither VSOE nor third party evidence is available. The applicable revenue recognition criteria are then applied to each of the units.

The Company recognizes revenue when the four basic criteria of revenue recognition are met: (i) a contractual agreement exists; (ii) the transfer of technology has been completed or services have been rendered; (iii) the fee is fixed or determinable; and (iv) collectability is reasonably assured. For each source of revenue, the Company complies with the above revenue recognition criteria in the following manner:

- Collaborative arrangements typically consist of non-refundable and/or exclusive up front technology access fees, cost reimbursements for specific research and development spending, and various milestone and future product royalty payments. If the delivered technology does not have stand-alone value, the amount of revenue allocable to the delivered technology is deferred. Non-refundable upfront fees with stand-alone value that are not dependent on future performance under these agreements are recognized as revenue when received, and are deferred if the Company has continuing performance obligations and has no objective and reliable evidence of the fair value of those obligations. The Company recognizes non-refundable upfront technology access fees under agreements in which it has a continuing performance obligation ratably, on a straight-line basis, over the period in which the Company is obligated to provide services. Cost reimbursements for research and development spending are recognized when the related costs are incurred and when collectability is reasonably assured. Payments received related to substantive, performance-based “at-risk” milestones are recognized as revenue upon achievement of the milestone event specified in the underlying contracts, which represent the culmination of the earnings process. Amounts received in advance are recorded as deferred revenue until the technology is transferred, costs are incurred, or a milestone is reached.
- Technology license agreements typically consist of non-refundable upfront license fees, annual minimum access fees, development and/or regulatory milestone payments and/or royalty payments. Non-refundable upfront license fees and annual minimum payments received with separable stand-alone values are recognized when the technology is transferred or accessed, provided that the technology transferred or accessed is not dependent on the outcome of the continuing research and development efforts. Otherwise, revenue is recognized over the period of the Company’s continuing involvement, and, in the case of development and/or regulatory milestone payments, when the applicable event triggering such a payment has occurred.
- Government grants, which support the Company’s research efforts on specific projects, generally provide for reimbursement of approved costs as defined in the terms of grant awards. Grant revenue is recognized when associated project costs are incurred.

#### **Research and Development Expenses**

Research and development expenses include internal and external costs. Internal costs include salaries and employment related expenses of the Company’s internal scientific personnel and direct project costs. External research and development expenses consist of sponsored stem cell research and development costs, costs associated with non-clinical and clinical drug rescue and development activities, including development of AV-101, the Company’s drug development candidate which has successfully completed Phase 1 development, and costs related to protection of the Company’s intellectual property, including, but not limited to, application and prosecution of patents related to the Company’s stem cell technology platform, *Human Clinical Trials in a Test Tube*, and AV-101. All such research and development costs are charged to expense as incurred.

#### **Stock-Based Compensation**

The Company recognizes compensation cost for all stock-based awards to employees in its financial statements based on their grant date fair value. Stock-based compensation expense is recognized over the period during which the employee is required to perform service in exchange for the award, which generally represents the scheduled vesting period of options and warrants to purchase shares of the Company’s common stock. The Company has no awards with market or performance conditions. For stock-based awards to non-employees, the Company re-measures the fair value of such awards as they vest and the resulting value is recognized as an expense during the period over which applicable services are performed by the recipient.

#### **Income Taxes**

The Company accounts for income taxes using the asset and liability approach for financial reporting purposes. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. Valuation allowances are established, when necessary, to reduce the deferred tax assets to an amount expected to be realized.

**Concentrations of Credit Risk**

Financial instruments, which potentially subject the Company to concentrations of credit risk, consist principally of cash and cash equivalents. The Company's investment policies limit any such investments to short-term, low-risk investments. The Company deposits cash and cash equivalents with quality financial institutions and is insured to the maximum of federal limitations. Balances in these accounts may exceed federally insured limits at times.

**Warrant Liability**

The Company has issued certain warrants to Platinum and, subject to Platinum's exercise of its rights to exchange shares of the Company's Series A Preferred that it holds, the Company is also obligated to issue an additional warrant to Platinum, that contain an exercise price adjustment feature in the event the Company subsequently issues additional equity instruments at a price lower than the exercise price of the warrants. The Company accounts for these warrants as non-cash liabilities and estimates their fair value as described in Note 4, *Fair Value Measurements*; Note 9, *Convertible Promissory Notes and Other Notes Payable*, and Note 10, *Capital Stock*. The Company computes the fair value of the warrant liability at each reporting period and the change in the fair value is recorded as non-cash expense or non-cash income. The key component in determining the fair value of the warrant and the related liability is the Company's stock price, which is subject to significant fluctuation and is not under the Company's control. The resulting change in the fair value of the warrant liability on the Company's net income or loss is therefore also subject to significant fluctuation and will continue to be so until all of the warrants are issued and exercised, amended or expire. Assuming all other fair value inputs remain generally constant, the Company will record an increase in the warrant liability and non-cash expense when its stock price increases and a decrease in the warrant liability and non-cash income when its stock price decreases.

**Comprehensive Loss**

The Company has no components of other comprehensive loss other than net loss, and accordingly the Company's comprehensive loss is equivalent to its net loss for the periods presented.

**Loss per Common Share**

Basic income (loss) per share of common stock excludes the effect of dilution and is computed by dividing net income (loss) by the weighted-average number of shares of common stock outstanding for the period. Diluted income (loss) per share of common stock reflects the potential dilution that could occur if securities or other contracts to issue shares of common stock were exercised or converted into shares of common stock. In calculating diluted net income (loss) per share, the Company adjusts the numerator for the change in the fair value of the warrant liability attributable to outstanding warrants, only if dilutive, and increases the denominator to include the number of potentially dilutive common shares assumed to be outstanding during the period using the treasury stock method. As a result of the Company's net loss for both periods presented, potentially dilutive securities were excluded from the computation, as their effect would be antidilutive. Additionally, no potentially dilutive securities were assumed to be converted into common shares and outstanding during either period for purposes of calculating diluted earnings per share.



Basic and diluted net loss attributable to common stockholders per share was computed as follows:

|   | Years Ended March 31, |                        |
|---|-----------------------|------------------------|
|   | 2014                  | 2013                   |
| <b>Numerator:</b>   |                       |                        |
| Net loss attributable to common stockholders for basic earnings per share   | \$ (2,967,700)        | \$ (23,079,900)        |
| less: change in fair value of warrant liability attributable to Exchange,<br>Investment and July 2013 Warrants issued to Platinum | (1,219,500)           | -                      |
| <b>Net loss for diluted earnings per share attributable to common stockholders</b>  | <b>\$ (4,187,200)</b> | <b>\$ (23,079,900)</b> |
| <b>Denominator:</b>   |                       |                        |
| Weighted average basic common shares outstanding  | 21,973,149            | 18,108,444             |
| Assumed conversion of dilutive securities:  |                       |                        |
| Warrants to purchase common stock   | -                     | -                      |
| Potentially dilutive common shares assumed converted  | -                     | -                      |
| <b>Denominator for diluted earnings per share - adjusted<br/>weighted average shares</b>  | <b>21,973,149</b>     | <b>18,108,444</b>      |
| <b>Basic net loss attributable to common stockholders per common share</b>  | <b>\$ (0.14)</b>      | <b>\$ (1.27)</b>       |
| <b>Diluted net loss attributable to common stockholders per common share</b>  | <b>\$ (0.19)</b>      | <b>\$ (1.27)</b>       |

Potentially dilutive securities excluded in determining diluted net loss per common share for the fiscal years ended March 31, 2014 and 2013 are as follows:

|   | Fiscal Years Ended March 31, |                   |
|---|------------------------------|-------------------|
|   | 2014                         | 2013              |
| Series A preferred stock issued and outstanding <sup>(1)</sup>  | 15,000,000                   | 15,000,000        |
| Warrant shares issuable to Platinum upon exercise of common stock warrants by Platinum upon exchange of Series A preferred stock under the terms of the October 11, 2012 Note Purchase and Exchange Agreement | 7,500,000                    | 7,500,000         |
| Outstanding options under the 2008 and 1999 Stock Incentive Plans   | 4,249,271                    | 4,912,604         |
| Outstanding warrants to purchase common stock   | 17,095,633                   | 14,660,335        |
| 10% convertible Exchange Note and Investment Notes issued to Platinum in October 2012, February 2013 and March 2013, including accrued interest through March 31, 2014 <sup>(2)</sup>                         | 7,495,957                    | 6,775,682         |
| 10% convertible note issued to Platinum on July 26, 2013, including accrued interest through March 31, 2014   | 535,506                      | -                 |
| 10% convertible notes issued as a component of Unit Private Placements, including accrued interest through March 31, 2014   | 2,186,811                    | -                 |
| <b>Total</b>  | <b>54,063,178</b>            | <b>48,848,621</b> |

<sup>(1)</sup> Assumes exchange under the terms of the October 11, 2012 Note Exchange and Purchase Agreement with Platinum

<sup>(2)</sup> Assumes conversion under the terms of the October 11, 2012 Note Exchange and Purchase Agreement with Platinum and the terms of the individual notes

#### Recent Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) No. 2014-09, *Revenue from Contracts with Customers (Topic 606)*, which supersedes the revenue recognition requirements in ASC 605, Revenue Recognition. This ASU is based on the principle that revenue is recognized to depict the transfer of goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The ASU also requires additional disclosure about the nature, amount, timing and uncertainty of revenue and cash flows arising from customer contracts, including significant judgments and changes in judgments and assets recognized from costs incurred to obtain or fulfill a contract. The effective date will be the first annual period beginning after December 15, 2016, using one of two retrospective application methods. The Company is currently evaluating the impact on its Consolidated Financial Statements of adopting this ASU.

In June 2014, the FASB issued ASU No. 2014-10, *Development Stage Entities (Topic 915): Elimination of Certain Financial Reporting Requirements, Including an Amendment to Variable Interest Entities Guidance in Topic 810, Consolidation*. The amendments in this ASU remove all incremental financial reporting requirements for development stage entities. Among other changes, this ASU will no longer require development stage entities to present inception-to-date information about income statement line items, cash flows, and equity transactions. The presentation and disclosure requirements in Topic 915 will no longer be required for the first annual period beginning after December 15, 2014. The Company’s adoption of this ASU will result in the elimination of the inception-to-date information currently included in its Consolidated Statements of Operations and Comprehensive Loss, Cash Flows and Stockholders’ Deficit effective with the fiscal year beginning in April 2015.

#### 4. Fair Value Measurements

The Company follows the principles of fair value accounting as they relate to its financial assets and financial liabilities. Fair value is defined as the estimated exit price received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, rather than an entry price that represents the purchase price of an asset or liability. Where available, fair value is based on observable market prices or parameters, or derived from such prices or parameters. Where observable prices or inputs are not available, valuation models are applied. These valuation techniques involve some level of management estimation and judgment, the degree of which is dependent on several factors, including the instrument’s complexity. The required fair value hierarchy that prioritizes observable and unobservable inputs used to measure fair value into three broad levels is described as follows:

- *Level 1* — Quoted prices (unadjusted) in active markets that are accessible at the measurement date for assets or liabilities. The fair value hierarchy gives the highest priority to Level 1 inputs.
- *Level 2* — Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.
- *Level 3* — Unobservable inputs (*i.e.*, inputs that reflect the reporting entity’s own assumptions about the assumptions that market participants would use in estimating the fair value of an asset or liability) are used when little or no market data is available. The fair value hierarchy gives the lowest priority to Level 3 inputs.

A financial instrument’s categorization within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement. Where quoted prices are available in an active market, securities are classified as Level 1 of the valuation hierarchy. If quoted market prices are not available for the specific financial instrument, then the Company estimates fair value by using pricing models, quoted prices of financial instruments with similar characteristics or discounted cash flows. In certain cases where there is limited activity or less transparency around inputs to valuation, financial assets or liabilities are classified as Level 3 within the valuation hierarchy.

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The Company does not use derivative instruments for hedging of market risks or for trading or speculative purposes. In conjunction with the Senior Secured Convertible Promissory Notes and related Exchange Warrant and Investment Warrants issued to Platinum in October 2012, February 2013 and March 2013 (see Note 9, *Convertible Promissory Notes and Other Notes Payable*), and the potential issuance of the Series A Exchange Warrant (see Note 10, *Capital Stock*), all pursuant to the October 2012 Agreement, and the Senior Secured Convertible Promissory Note and related warrant issued to Platinum in July 2013, the Company determined that the warrants included certain exercise price adjustment features requiring the warrants to be treated as liabilities, which were recorded at their estimated fair value. The Company determined the fair value of the warrant liability using a Monte Carlo simulation model with Level 3 inputs. Inputs used to determine fair value include the remaining contractual term of the notes, risk-free interest rates, expected volatility of the price of the underlying common stock, and the probability of a financing transaction that would trigger a reset in the warrant exercise price, and, in the case of the Series A Exchange Warrant, the probability of Platinum's exchange of the shares of Series A Preferred it holds into shares of common stock. Changes in the fair value of these warrant liabilities have been recognized as non-cash income or expense in the Consolidated Statements of Operations and Comprehensive Loss for the fiscal years ended March 31, 2014 and 2013.

The fair value hierarchy for liabilities measured at fair value on a recurring basis is as follows:

|                   | <u>Total Carrying Value</u> | <u>Fair Value Measurements at Reporting Date Using</u>                |  |  |
|-------------------|-----------------------------|---|--|--|
|                   |                             | <u>Quoted Prices in Active Markets for Identical Assets (Level 1)</u> | <u>Significant Other Observable Inputs (Level 2)</u> | <u>Significant Unobservable Inputs (Level 3)</u> |
| March 31, 2014:   |                             |   |  |  |
| Warrant liability | \$ 2,973,900                | \$ -  | \$ -   | \$ 2,973,900                                     |
| March 31, 2013:   |                             |   |  |  |
| Warrant liability | \$ 6,394,000                | \$ -  | \$ -   | \$ 6,394,000                                     |

During the fiscal years ended March 31, 2014 and 2013, there were no significant changes to the valuation models used for purposes of determining the fair value of the Level 3 warrant liability.

The changes in Level 3 liabilities measured at fair value on a recurring basis are as follows:

|   | <u>(Level 3)</u><br><u>Warrant Liability</u> |
|---|--|
| Balance at March 31, 2012   | \$ -   |
| Recognition of warrant liability upon issuance of Exchange and Investment Warrants to Platinum under October 2012 Agreement                 | 1,690,000                                    |
| Recognition of warrant liability in connection with Series A Exchange Warrant potentially issuable to Platinum under October 2012 Agreement | 3,068,200                                    |
| Mark to market loss included in net loss  | 1,635,800                                    |
| Balance at March 31, 2013   | 6,394,000                                    |
| Recognition of warrant liability upon issuance of Senior Secured Convertible Promissory Note and warrant to Platinum on July 26, 2013       | 146,800                                      |
| Mark to market gain included in net loss  | (3,566,900)                                  |
| Balance at March 31, 2014   | \$ 2,973,900                                 |

No assets or other liabilities were measured on a recurring basis at fair value at March 31, 2014 or 2013.

**5. Prepaid Expenses and Other Current Assets**

Prepaid expenses and other current assets consist of the following:

|  | March 31,        |                  |
|--|------------------|------------------|
|  | 2014             | 2013             |
| Insurance  | \$ 21,800        | \$ 19,700        |
| Legal fees   | 3,400            | 3,400            |
| Interest receivable on note receivable from sale of common stock | 2,800            | 1,600            |
| Technology license fees and all other                            | 12,500           | 9,000            |
|  | <u>\$ 40,500</u> | <u>\$ 33,700</u> |

**6. Property and Equipment**

Property and equipment consists of the following:

|   | March 31,         |                   |
|---|-------------------|-------------------|
|   | 2014              | 2013              |
| Laboratory equipment                      | \$ 653,600        | \$ 649,500        |
| Tenant improvements                       | 27,000            | -                 |
| Computers and network equipment           | 32,100            | 12,900            |
| Office furniture and equipment            | 69,600            | 69,600            |
|   | <u>782,300</u>    | <u>732,000</u>    |
| Accumulated depreciation and amortization | <u>(606,000)</u>  | <u>(551,300)</u>  |
| Property and equipment, net               | <u>\$ 176,300</u> | <u>\$ 180,700</u> |

In connection with the issuance of Senior Secured Convertible Promissory Notes to Platinum in July and August 2012, and under the October 2012 Agreement with Platinum, the Company entered into a Security Agreement with Platinum under which the repayment of all amounts due under the terms of the various Senior Secured Convertible Promissory Notes is secured by the Company's assets, including its tangible and intangible personal property, licenses, patent licenses, trademarks and trademark licenses (see Note 9, *Convertible Promissory Notes and Other Notes Payable*).

**7. AV-101 Acquisition**

In November 2003, pursuant to an Agreement and Plan of Merger (the "*Artemis Agreement*"), the Company acquired Artemis Neurosciences ("*Artemis*"), a privately-held company also in the development stage, for the purpose of acquiring exclusive licenses to patents and other intellectual property related to the use and function of AV-101, a prodrug candidate then in nonclinical development, with the potential to treat neuropathic pain, depression, and other neurological diseases and disorders, epilepsy, Huntington's disease and Parkinson's disease. Pursuant to the Artemis Agreement, all shares of Artemis common stock were converted into shares of VistaGen California's Series B-1 Preferred Stock, resulting in VistaGen California's pre-merger issuance of 1,356,750 shares of its Series B-1 Preferred Stock, valued, pre-merger, at \$5.545 per share, resulting in the pre-merger purchase price of all outstanding shares of Artemis of \$7,523,200. The total purchase price was allocated to AV-101 acquired in-process research and development and was expensed concurrent with the Artemis acquisition, since AV-101 required further research and development before the Company could commence clinical trials and did not have any proven alternative future uses.

To date, the Company has received an aggregate of \$8.8 million from the NIH for non-clinical and clinical development of AV-101. The Company successfully completed a Phase 1a clinical trial of AV-101 during the fiscal year ended March 31, 2012 and successfully completed a Phase 1b clinical trial of AV-101 in the fiscal year ended March 31, 2013.



### Senior Secured Convertible Promissory Notes issued to Platinum

On July 2, 2012 and on August 31, 2012, the Company issued to Platinum senior secured convertible promissory notes in the principal amount of \$500,000 (the "July 2012 Platinum Note") and \$750,000 (the "August 2012 Platinum Note"), respectively. The July 2012 Platinum Note and the August 2012 Platinum Note each accrued interest at the rate of 10% per annum and were due and payable on July 2, 2015. The July 2012 Platinum Note and the August 2012 Platinum Note were each mandatorily convertible into securities that the Company might have issued in an equity, equity-based, or debt financing, or series of financings, subsequent to the issuance of the note resulting in gross proceeds to the Company of at least \$3,000,000, excluding any additional investment by Platinum.

On October 11, 2012, the Company and Platinum entered into a Note Exchange and Purchase Agreement (the "October 2012 Agreement") in which the July 2012 Platinum Note and the August 2012 Platinum Note (together, the "Existing Notes"), as well as the related accrued interest, were consolidated into and exchanged for a single senior secured convertible note in the amount of \$1,272,577 (the "Exchange Note") and Platinum agreed to purchase four additional 10% senior secured convertible promissory notes in the aggregate principal amount of \$2.0 million (the "Investment Notes"), issuable over four separate \$500,000 tranches between October 2012 and December 2012. The first and second \$500,000 Investment Notes, in the aggregate principal amount of \$1.0 million, were purchased by Platinum on October 11, 2012 and October 19, 2012, respectively. The Company and Platinum also entered into an amended and restated Security Agreement to secure repayment of all obligations due and payable under the terms of the Investment Notes and Exchange Note.

On November 14, 2012 and January 31, 2013, the Company and Platinum entered into amendments to the October 2012 Agreement (the "NEPA Amendments"), pursuant to which the final two \$500,000 tranches contemplated by the October 2012 Agreement were combined into a single Investment Note in the aggregate principal amount of \$1.0 million (the "\$1.0 Million Note"). Under the terms and conditions of the NEPA Amendment, Platinum agreed to purchase the \$1.0 Million Note within five business days of the Company's notice to Platinum of the consummation of a debt or equity financing, or combination of financings, prior to February 15, 2013, resulting in gross proceeds to the Company of at least \$1.0 million (the "Additional Financing Requirement"). The Company satisfied the Additional Financing Requirement on February 12, 2013 (See Note 10, *Capital Stock*). Effective February 22, 2013, the Company and Platinum entered into an additional amendment to the October 2012 Agreement pursuant to which Platinum agreed to purchase an Investment Note in the face amount of \$250,000 on February 22, 2013 and an additional Investment Note in the face amount of \$750,000 on or before March 12, 2013, which Investment Note was issued by the Company and purchased by Platinum on March 12, 2013.

The Exchange Note and each Investment Note (together, the "Notes") accrue interest at a rate of 10% per annum and, subject to certain limitations and exceptions set forth in the Notes, unless converted earlier and voluntarily by Platinum, will be due and payable in restricted shares of the Company's common stock on October 11, 2015, or three years from the date of issuance, as determined by the terms of the Investment Notes. Subject to certain terms and conditions, at maturity, all principal and accrued interest under the Notes will be paid by the Company through the issuance of restricted shares of common stock to Platinum. Subject to certain potential adjustments set forth in the Notes, the number of restricted shares of common stock issuable as payment in full for each of the Notes at maturity will be calculated by dividing the outstanding Note balance plus accrued interest by \$0.50 per share. Prior to maturity, the outstanding principal and any accrued interest on the Exchange Note and each of the Investment Notes is convertible, in whole or in part, at Platinum's option into shares of the Company's common stock at a conversion price of \$0.50 per share, subject to certain adjustments. The conversion feature in each of the Notes constituted a beneficial conversion feature at the date of issuance.

As additional consideration for the purchase of the Investment Notes, the Company issued to Platinum warrants to purchase an aggregate of 2,000,000 shares of the Company's common stock, issuable in separate tranches together with each Investment Note, of which a warrant to purchase 500,000 shares was issued to Platinum on October 11, 2012 and on October 19, 2012, a warrant to purchase 250,000 shares was issued to Platinum on February 22, 2013 and a warrant to purchase 750,000 shares was issued to Platinum on March 12, 2013 (each an "Investment Warrant"). In addition, the Company issued Platinum a warrant to purchase 1,272,577 shares of the Company's common stock in connection with the issuance of the Exchange Note (the "Exchange Warrant"). At issuance, the Platinum Exchange Warrant and each Investment Warrant had a term of five years and an exercise price of \$1.50 per share, subject to certain adjustments. Effective on May 24, 2013, the Company and Platinum entered into an Amendment and Waiver pursuant to which the Company agreed to reduce the exercise price of the Exchange Warrant and the Investment Warrants from \$1.50 per share to \$0.50 per share in consideration for Platinum's agreement to waive its rights for any increase in the number of shares of common stock issuable under the adjustment provisions of the Exchange Warrant and the Investment Warrants that would otherwise occur from certain issuances and prospective issuances of Company securities, including issuances pursuant to the Autilion Financing and the 2012 Private Placement of Units (see Note 10, *Capital Stock*), at a price of less than \$1.50 per share.

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On July 26, 2013, the Company issued an additional senior secured convertible promissory note in the principal amount of \$250,000 to Platinum (the “July 2013 Note”). The July 2013 Note matures on July 26, 2016 and accrues interest at a rate of 10% per annum. Subject to certain terms and conditions, at maturity, all principal and accrued interest under the July 2013 Note will be paid by the Company through the issuance of restricted shares of common stock to Platinum. Subject to certain potential adjustments set forth in the July 2013 Note, the number of restricted shares of common stock issuable as payment in full for the July 2013 Note at maturity will be calculated by dividing the outstanding balance plus accrued interest of the July 2013 Note by \$0.50 per share. In the same manner as the Exchange Note and the Investment Notes, prior to maturity, the outstanding principal and any accrued interest on the July 2013 Note is convertible, in whole or in part, at Platinum’s option into shares of the Company’s restricted common stock at a conversion price of \$0.50 per share, subject to certain adjustments. The conversion feature in the July 2013 Note constituted a beneficial conversion feature at the date of issuance. As additional consideration for the purchase of the July 2013 Note, the Company issued to Platinum a five-year warrant to purchase 250,000 shares of the Company’s common stock at an exercise price of \$0.50 per share (the “July 2013 Warrant”).

As a result of the beneficial conversion feature in the Exchange Note and the issuance of the Exchange Warrant, the Company determined that the cancellation of the Existing Notes and the issuance of the Exchange Note should be accounted for as an extinguishment of debt. The Company determined that the fair value of the Exchange Note, including the beneficial conversion feature, was \$2,355,800 using a Monte Carlo simulation model and inception-date assumptions including market price of common stock of \$0.75 per share; stock price volatility of 85%; risk-free interest rate of 0.67%; conversion price of \$0.50 per share; note term of 3 years; 75% probability that conversion would occur at or immediately prior to maturity; and 25% probability that an event requiring either the repayment of the Exchange Note or its conversion into common stock would occur prior to maturity. The fair value of the Exchange Note at inception represented a substantial premium over its face value. In accordance with the provisions of ASC 470-20, *Debt with Conversion and Other Options*, the Company recognized the premium in excess of the face value, \$1,083,200, as a non-cash charge to loss on early extinguishment of debt in the accompanying Consolidated Statement of Operations and Comprehensive Income for the year ended March 31, 2013 and as a credit to additional paid-in capital and recorded the liability for the Exchange Note at its face value.

Subject to limited exceptions, which include issuances of common stock pursuant to the 2012 Private Placement of Units (see Note 10, *Capital Stock*), the Exchange Warrant, each of the Investment Warrants and the July 2013 Warrant include certain exercise price reset and anti-dilution protection features in the event that the Company issues other shares of common stock during the five-year term of the warrants at a price less than their initial \$1.50 per share, or \$0.50 per share in the case of the July 2013 Warrant, exercise price. As a result of these provisions, the Exchange Warrant, the Investment Warrants and the July 2013 Warrant do not meet the criteria set forth in ASC 815, *Derivatives and Hedging*, to be treated as equity instruments. Consequently, the Company recorded the Exchange Warrant, each of the Investment Warrants and the July 2013 Warrant as liabilities at their fair value, which was estimated at the issuance date using a Monte Carlo simulation model and the following assumptions:

|                                | Exchange<br>Warrant | Investment Warrants Issued on: |            |            |    |           |  |           |  |
|--------------------------------|---------------------|--------------------------------|------------|------------|----|-----------|--|-----------|--|
|                                |                     | 10/11/2012                     |            | 10/19/2012 |    | 2/22/2013 |  | 3/12/2013 |  |
| Market price of common stock   | \$ 0.75             | \$ 0.75                        | \$ 0.75    | \$ 0.60    | \$ |           |  |           |  |
| Exercise price                 | \$ 1.50             | \$ 1.50                        | \$ 1.50    | \$ 1.50    | \$ |           |  |           |  |
| Risk-free interest rate        | 0.67 %              | 0.67 %                         | 0.67 %     | 0.84 %     |    |           |  |           |  |
| Volatility                     | 85.0 %              | 85.0 %                         | 85.0 %     | 85.0 %     |    |           |  |           |  |
| Term (years)                   | 5.0                 | 5.0                            | 5.0        | 5.0        |    |           |  |           |  |
| Dividend rate                  | 0 %                 | 0 %                            | 0 %        | 0 %        |    |           |  |           |  |
| Fair value per share           | \$ 0.53             | \$ 0.53                        | \$ 0.53    | \$ 0.39    | \$ |           |  |           |  |
| Number of shares               | 1,272,577           | 500,000                        | 500,000    | 250,000    |    |           |  |           |  |
| Fair value at date of issuance | \$ 672,000          | \$ 264,000                     | \$ 264,000 | \$ 97,000  | \$ |           |  |           |  |

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The fair value of the Exchange Warrant at the date of issuance was recorded as a liability and as a corresponding charge to loss on early extinguishment of debt in the accompanying Consolidated Statement of Operations and Comprehensive Income for the year ended March 31, 2013. The fair value of each Investment Warrant and the July 2013 Warrant at the date of issuance was recorded as a liability and as a corresponding discount to the related Investment Note or the July 2013 Note. Subject to limitations of the absolute amount of discount attributable to each Investment Note and the July 2013 Note, the Company treated the issuance-date intrinsic value of the beneficial conversion feature embedded in each Investment Note and the July 2013 Note as an additional component of the discount attributable to each note and recorded a discount attributable to the beneficial conversion feature for each note. The Company amortizes the aggregate discount attributable to each of the Investment Notes and the July 2013 Note using the interest method over the respective term of each note. The table below summarizes the components of the discount and the effective interest rate at inception for the Exchange Note, each of the Investment Notes and the July 2013 Note.

|                               | Exchange Note | Inception Date Carrying Value of |            |            |           |
|-------------------------------|---------------|----------------------------------|------------|------------|-----------|
|                               |               | Investment Notes Issued on:      |            |            |           |
|                               |               | 10/11/2012                       | 10/19/2012 | 2/22/2013  | 3/12/2013 |
| Face value                    | \$ 1,272,600  | \$ 500,000                       | \$ 500,000 | \$ 250,000 | \$        |
| Discount attributable to:     |               |                                  |            |            |           |
| Fair value of warrant         | -             | (264,000)                        | (264,000)  | (97,000)   |           |
| Beneficial conversion feature | -             | (231,000)                        | (231,000)  | (147,000)  |           |
| Inception date carrying value | \$ 1,272,600  | \$ 5,000                         | \$ 5,000   | \$ 6,000   | \$        |
| Effective Interest Rate       | 10.00 %       | 159.05 %                         | 159.05 %   | 127.27 %   |           |

The fair value of the Exchange Warrant, the Investment Warrants and the July 2013 Warrant was re-measured as of March 31, 2014 and 2013 at an aggregate of \$915,300 and \$1,988,000; respectively. The aggregate decrease in fair value since March 31, 2013, or inception in the case of the July 2013 Warrant, of \$1,219,500 and the aggregate increase in fair value of \$298,000 from inception through March 31, 2013 is reflected in the Change in Warrant Liability in the accompanying Consolidated Statement of Operations and Comprehensive Income for the years ended March 31, 2014 and 2013.

**10% Convertible Notes Issued in Connection with 2013/2014 Unit Private Placement**

As described more completely in the section entitled 2013/2014 Unit Private Placement in Note 10, *Capital Stock*, between August 2013 and March 2014, the Company issued to accredited investors 10% convertible promissory notes (the "2013/2014 Unit Notes") in an aggregate face amount of \$1,007,500 in connection with its private placement of Units. The 2013/2014 Unit Notes mature on July 30, 2014 and each 2013 Unit Note and its related accrued interest is convertible into shares of the Company's common stock at a fixed conversion price of \$0.50 per share at or prior to maturity, at the option of the accredited investor. The Company has the right to prepay the 2013 Unit Notes and accrued interest in cash prior to maturity without penalty.



The Company allocated the proceeds from the sale of the units to the 2013/2014 Unit Notes, the common stock and the warrants comprising the Units based on the relative fair value of the individual securities in each Unit on the dates of the Unit sales. Based on the short-duration of the 2013/2014 Unit Notes and their other terms, the Company determined that the fair value of the 2013/2014 Unit Notes at the date of issuance was equal to their face value. Accordingly, the Company recorded an initial discount attributable to each 2013/2014 Unit Note for an amount representing the difference between the face value of the 2013/2014 Unit Note and its relative value. Additionally, the 2013/2014 Unit Notes contain an embedded conversion feature, certain of which had an intrinsic value at the issuance date, which value the Company treated as an additional discount attributable to those 2013/2014 Unit Notes, subject to limitations on the absolute amount of discount attributable to each 2013/2014 Unit Note. The Company recorded a corresponding credit to additional paid-in capital, an equity account in the Consolidated Balance Sheet, attributable to the beneficial conversion feature. The Company amortizes the aggregate discount attributable to each of the 2013/2014 Unit Notes using the interest method over the respective term of each Unit Note. Based on their respective discounts, the weighted average effective interest rate attributable to the 2013/2014 Unit Notes is 464.1%.

#### **10% Convertible Note Issued in Connection with 2014 Unit Private Placement**

As described more completely in the section entitled 2014 Unit Private Placement in Note 10, *Capital Stock*, during March 2014, the Company issued to an accredited investor a 10% convertible note (the "2014 Unit Note") in the face amount of \$50,000 in connection with its private placement offering of Units. (See Note 17, *Subsequent Events*, for information regarding additional notes issued in connection with the 2014 Unit Private Placement.) The 2014 Unit Note matures on March 31, 2015 ("Maturity") and the 2014 Unit Note and its related accrued interest (the "Outstanding Balance") is convertible into shares of the Company's common stock at a conversion price of \$0.50 per share at or prior to maturity, at the option of the investor, or, upon the Company's consummation of either (i) an equity or equity-based public offering registered with the U.S. Securities and Exchange Commission ("SEC"), or (ii) an equity or equity-based private financing, or series of such financing transactions, not registered with the SEC, in each case resulting in gross proceeds to the Company of at least \$10.0 million prior to Maturity (a "Qualified Financing"), the Outstanding Balance of the 2014 Unit Note will automatically convert into the securities sold in the Qualified Financing, based on the following formula: (the Outstanding Balance as of the closing of the Qualified Financing) x 1.25 / (the per security price of the securities sold in the Qualified Financing). This automatic conversion feature results in a contingent beneficial conversion feature which will be recorded upon the consummation of a Qualified Financing.

The Company allocated the proceeds from the sale of the 2014 unit to the 2014 Unit Notes, the common stock and the warrants comprising the units based on the relative fair value of the individual securities in the unit on the date of the unit sale. Based on the short-duration of the 2014 Unit Note and its other terms, the Company determined that the fair value of the 2014 Unit Note at the date of issuance was equal to its face value. Accordingly, the Company recorded an initial discount attributable to the 2014 Unit Note for an amount representing the difference between the face value of the 2014 Unit Note and its relative value. Additionally, the 2014 Unit Note contains an embedded conversion feature which had an intrinsic value at the issuance date. The Company treated the intrinsic value of the conversion feature as an additional discount to the 2014 Unit Note. The Company recorded a corresponding credit to additional paid-in capital, an equity account in the Consolidated Balance Sheet, attributable to the beneficial conversion feature. The Company amortizes the aggregate discount attributable to the 2014 Unit Note using the interest method over the term of the note. Based on its aggregate discount, the effective interest rate attributable to the 2014 Unit Note is 123.8%.

#### **2012 Convertible Promissory Notes**

On February 28, 2012, the Company completed a private placement of convertible promissory notes to accredited investors in the aggregate principal amount of \$500,000 (the "2012 Notes"). Each 2012 Note accrued interest at the rate of 12% per annum and was to mature on the earlier of (i) twenty-four months from the date of issuance, or (ii) the consummation of an equity, equity-based, or series of equity-based financings resulting in gross proceeds to the Company of at least \$4.0 million (the "Qualified Financing Threshold"). The holders of the 2012 Notes had the right to voluntarily convert the outstanding principal amount of the 2012 Notes and all accrued and unpaid interest (the "Outstanding Balance") at any time prior to maturity into that number of restricted shares of the Company's common stock equal to the Outstanding Balance, divided by \$3.00 (the "Conversion Shares"). In addition, in the event the Company consummated a financing equal to or exceeding the Qualified Financing Threshold, and the price per unit of the securities sold, or price per share of common stock issuable in connection with such financing, was at least \$2.00 (a "Qualified Financing"), the Outstanding Balance would have automatically converted into such securities, including warrants, that were issued in the Qualified Financing, the amount of which would have been determined according to the following formula: (Outstanding Balance at the closing date of the Qualified Financing) x (1.25) / (the per security price of the securities sold in the Qualified Financing).

On November 15, 2012, the holders of the 2012 Notes entered into an Exchange Agreement with the Company (the "Exchange Agreement"). Under the terms of the Exchange Agreement, (i) the current amount due under the terms of the 2012 Notes, \$678,600, which amount included all accrued interest as well as additional consideration for the conversion, was exchanged for a total of 1,357,281 restricted shares of the Company's common stock and five-year warrants to purchase 678,641 restricted shares of the Company's common stock at an exercise price of \$1.50 per share (the "Note Exchange Securities"). Additionally, the Company issued a five-year warrant to purchase 72,000 restricted shares of the Company's common stock at an exercise price of \$1.50 per share as partial compensation to a placement agent that had placed certain of the 2012 Notes. The Company recorded the issuance of the warrants with a charge to interest expense of \$28,200 and a corresponding credit to additional paid-in capital.

The Company determined that the exchange of the 2012 Notes into restricted shares of its common stock should be accounted for as an extinguishment of debt. The Company recognized as consideration in the exchange the sum of (i) the fair value of the restricted common stock issued in the exchange at the quoted market price of \$0.70 per share on the date of the exchange, or \$950,100, and (ii) the fair value of the warrants, which was determined to be \$0.39 per share, or \$265,500, using the Black Scholes Option Pricing Model and the following assumptions: market price per share: \$0.70; exercise price per share: \$1.50; risk-free interest rate: 0.62%; contractual term: 5 years; volatility: 89.5%; expected dividend rate: 0%. The aggregate consideration less the net carrying value of the 2012 Notes, including accrued interest, resulted in the recognition of \$1,145,100 as a non-cash loss on early extinguishment of debt in the accompanying Consolidated Statements of Operations and Comprehensive Income for the fiscal year ended March 31, 2013. The warrants issued to the placement agent were valued using the same assumptions as used for the warrants issued to the exchanging note holders.

#### **Restructuring of Note Payable to Morrison & Foerster**

On May 5, 2011, the Company and Morrison & Foerster LLP ("Morrison & Foerster"), then the Company's general corporate and intellectual property counsel, amended a previously outstanding note (the "Original Note") issued by the Company in payment of legal services (the "Amended Note"). Under the Amended Note, the principal balance of the Original Note was increased to \$2,200,000, interest accrued at the rate of 7.5% per annum, and the Company was required to make an additional payment of \$100,000 within three business days of the date of the Amended Note. The Company made the required \$100,000 payment in a timely manner.

On August 31, 2012, the Company restructured the Amended Note (the "Restructuring Agreement"). Pursuant to the Restructuring Agreement, the Company issued to Morrison & Foerster two new unsecured promissory notes to replace the Amended Note, one in the principal amount of \$1,000,000 ("Replacement Note A") and the other in the principal amount of \$1,379,400 ("Replacement Note B") (together, the "Replacement Notes"); amended an outstanding warrant to purchase restricted shares of the Company's common stock (the "Amended M&F Warrant"); and issued a new warrant to purchase restricted shares of the Company's common stock (the "New M&F Warrant"). Under the terms of the Restructuring Agreement, the Amended Note was cancelled and all of the Company's past due payment obligations under the Amended Note were satisfied. The Company made a payment of \$155,000 to Morrison & Foerster on August 31, 2012 pursuant to the terms of the Amended Note, and issued the Replacement Notes, each dated as of August 31, 2012. Both Replacement Notes accrue interest at the rate of 7.5% per annum and are due and payable on March 31, 2016. Replacement Note A required monthly payments of \$15,000 per month through March 31, 2013, and requires \$25,000 per month thereafter until maturity. Payment of the principal and interest on Replacement Note B will be made solely in restricted shares of the Company's common stock pursuant to Morrison & Foerster's surrender from time to time of all or a portion of the principal and interest balance due on Replacement Note B in connection with its exercise of the New M&F Warrant, at an exercise price of \$1.00 per share, and concurrent cancellation of indebtedness and surrender of Replacement Note B; provided, however, that Morrison & Foerster shall have the option to require payment of Replacement Note B in cash upon the occurrence of a change in control of the Company or an event of default, and only in such circumstances.

The Company treated the aggregate of the incremental value of the Amended M&F Warrant and the fair value of the New M&F Warrant as a discount to the Replacement Notes. Under the terms of the Amended M&F Warrant, the Company amended the warrant to purchase 425,000 restricted shares of its common stock originally issued to Morrison & Foerster on March 15, 2010 to extend the expiration date of the warrant from December 31, 2014 to September 15, 2017 and to provide for exercise by paying cash or by the cancellation in whole or in part of the Company's indebtedness under either of the Replacement Notes. The Company determined that the incremental value of the Amended M&F Warrant was \$121,650 at the modification date using the Black-Scholes Option Pricing Model and the following assumptions:

| <b>Assumption:</b>                           | <b>Pre-modification</b> | <b>Post-modification</b> |
|--|-------------------------|--------------------------|
| Market price per share                       | \$ 0.94                 | \$ 0.94                  |
| Exercise price per share                     | \$ 2.00                 | \$ 2.00                  |
| Risk-free interest rate                      | 0.25%                   | 0.60%                    |
| Expected term in years                       | 2.33                    | 5.04                     |
| Volatility                                   | 77.9%                   | 88.8%                    |
| Dividend rate                                | 0.0%                    | 0.0%                     |
| <b>Weighted Average Fair Value per share</b> | <b>\$ 0.24</b>          | <b>\$ 0.52</b>           |

The New M&F Warrant is exercisable for the number of restricted shares of the Company's common stock equal to the principal and accrued interest due under the terms of Replacement Note B divided by the warrant exercise price of \$1.00 per share. At the August 31, 2012 date of grant, the New M&F Warrant was exercisable to purchase 1,379,376 restricted shares of the Company's common stock. The New M&F Warrant effectively permits exercise only by the cancellation in whole or in part of the Company's indebtedness under either of the Replacement Notes. The New M&F Warrant expires on September 15, 2017. The Company determined the fair value of the New M&F Warrant to be \$0.64 per share, or \$876,800, at the date of grant using the Black Scholes Option Pricing Model and the following assumptions: market price per share: \$0.94; exercise price per share: \$1.00; risk-free interest rate: 0.61%; contractual term: 5.04 years; volatility: 88.8%; expected dividend rate: 0%. The note discounts totaling \$1,197,900, including the \$199,500 remaining unamortized discount recorded prior to the modification, will be amortized to interest expense using the effective interest method over the term of the Replacement Notes. The aggregate amount of the incremental fair value of the Amended M&F Warrant and the fair value of the New M&F Warrant, \$998,450, was recognized as equity and was credited to additional paid-in capital in the accompanying Consolidated Balance Sheets. The effective interest rate on the Replacement Notes at the date of issuance was 32.3%, based on the stated interest rate, the amount of discount, and the term of the Replacement Notes. Through March 31, 2014, the Company has adjusted the New M&F Warrant to increase the number of restricted shares available for purchase by 195,191 shares, based on interest accrued on Replacement Note B through that date. The Company has recorded the fair value of the additional shares as a charge to interest expense and a corresponding credit to additional paid-in capital.

#### **Restructuring of Accounts Payable to Cato Research Ltd.**

On October 10, 2012, the Company issued to Cato Research Ltd ("CRL"), a contract research and development partner and a related party: (i) an unsecured promissory note in the initial principal amount of \$1,009,000, which is payable solely in restricted shares of the Company's common stock and which accrues interest at the rate of 7.5% per annum, compounded monthly (the "CRL Note"), as payment in full for all contract research and development services and regulatory advice ("CRO Services") rendered by CRL to the Company and its affiliates through December 31, 2012 with respect to the non-clinical and clinical development of AV-101, and (ii) a five-year warrant to purchase, at a price of \$1.00 per share, 1,009,000 restricted shares of the Company's common stock, the amount equal to the sum of the principal amount of the CRL Note, plus all accrued interest thereon, divided by \$1.00 per share (the "CRL Warrant"). The principal amount of the CRL Note may, at the Company's option, be automatically increased as a result of future CRO Services rendered by CRL to the Company and its affiliates from January 1, 2013 to June 30, 2013. The CRL Note is due and payable on March 31, 2016 and is payable solely by CRL's surrender from time to time of all or a portion of the principal and interest balance due on the CRL Note in connection with its concurrent exercise of the CRL Warrant, provided, however, that CRL will have the option to require payment of the CRL Note in cash upon the occurrence of a change in control of the Company or an event of default, and only in such circumstances.

The Company determined that the cancellation of the accounts payable to CRL for CRO Services and the related issuance of the CRL Note should be accounted for as an extinguishment of debt. Accordingly, the Company recorded the CRL Note at its fair value of \$857,900 based on the present value of its scheduled cash flows and assumptions regarding market interest rates for unsecured debt of similar quality. The Company determined the fair value of the CRL Warrant to be \$0.48 per share, or \$486,164, using the Black Scholes Option Pricing Model and the following assumptions: market price per share: \$0.75; exercise price per share: \$1.00; risk-free interest rate: 0.66%; contractual term: 5 years; volatility: 89.9%; expected dividend rate: 0%. The Company recognized the difference between the sum of the fair values of the CRL Note and the CRL Warrant less the accounts payable balance due to CRL, \$335,100, as a non-cash loss on early extinguishment of debt in the accompanying Consolidated Statements of Operations and Comprehensive Income for the year ended March 31, 2013. The fair value of the warrant, \$486,164, which is treated as an equity instrument, was credited to additional paid in capital at the issuance date. The difference between the face value of the CRL Note and its fair value, \$151,100, has been treated as a discount to the note and is being amortized over the term of the note using the interest method, resulting in an effective interest rate of 12.1% on the CRL Note. Through March 31, 2014, the Company has adjusted the CRL Warrant to increase the number of restricted shares available for purchase by 117,329 shares, based on interest accrued on the CRL Note through that date. The Company has recorded the fair value of the additional shares as a charge to interest expense and a corresponding credit to additional paid-in capital.

#### **Issuance and Restructuring of Long-Term Promissory Note to Cato Holding Company**

In April 2011, all amounts owed by the Company to Cato Holding Company ("CHC") and its affiliates, were consolidated into a single note, in the principal amount of \$352,300 (the "2011 CHC Note"). Concurrently, CHC released all of its security interests in certain of the Company's personal property.

On October 10, 2012, the Company and CHC restructured the 2011 CHC Note. The 2011 CHC Note was cancelled and exchanged for a new unsecured promissory note in the principal amount of \$310,400 (the "2012 CHC Note") and a five-year warrant to purchase 250,000 restricted shares of the Company's common stock at a price of \$1.50 per share (the "CHC Warrant"). The 2012 CHC Note accrues interest at a rate of 7.5% per annum and is due and payable in monthly installments of \$10,000, beginning November 1, 2012 and continuing until the outstanding balance is paid in full.

The Company determined that the cancellation of the 2011 CHC Note and the issuance of the 2012 CHC Note should be accounted for as an extinguishment of debt. Accordingly, the Company recorded the 2012 CHC Note at its fair value of \$291,100 based on the present value of its scheduled cash flows and assumptions regarding market interest rates for unsecured debt of similar quality. The Company determined the fair value of the CHC Warrant to be \$0.48 per share, or \$120,500, using the Black Scholes Option Pricing Model and the following assumptions: market price per share: \$0.75; exercise price per share: \$1.50; risk-free interest rate: 0.66%; contractual term: 5 years; volatility: 89.9%; expected dividend rate: 0%. The Company recognized the difference between the sum of the fair values of the 2012 CHC Note and the CHC Warrant less the carrying value of the 2011 CHC Note, \$119,100, as a non-cash loss on early extinguishment of debt in the accompanying Consolidated Statements of Operations and Comprehensive Income for the year ended March 31, 2013. The fair value of the warrant, \$120,500, which is treated as an equity instrument, was credited to additional paid in capital at the issuance date. The difference between the face value of the 2012 CHC Note and its fair value, \$19,300, has been treated as a discount to the note and is being amortized over the term of the note using the interest method, resulting in an effective interest rate of 11.9% on the CHC 2012 Note.

#### **Restructuring of Accounts Payable to University Health Network**

On October 10, 2012, the Company issued to the University Health Network ("UHN"): (i) an unsecured promissory note in the principal amount of \$549,500, which is payable solely in restricted shares of the Company's common stock and which accrues interest at the rate of 7.5% per annum, as payment in full for all sponsored stem cell research and development activities by UHN and Gordon Keller, Ph.D. under the SCRA through September 30, 2012 (the "UHN Note"), and (ii) a five-year warrant to purchase, at a price of \$1.00 per share, 549,500 restricted shares of the Company's common stock, the amount equal to the sum of the principal amount of the UHN Note, plus all accrued interest thereon, divided by \$1.00 per share (the "UHN Warrant"). The UHN Note is due and payable on March 31, 2016 and is payable solely by UHN's surrender from time to time of all or a portion of the principal and interest balance due on the UHN Note in connection with its concurrent exercise of the UHN Warrant, provided, however, that UHN will have the option to require payment of the UHN Note in cash upon the occurrence of a change in control of the Company or an event of default, and only in such circumstances.

The Company determined that the restructuring of the accounts payable to UHN under the SRCA, defined below, and the related issuance of the UHN Note should be accounted for as an extinguishment of debt. Accordingly, the Company recorded the UHN Note at its fair value of \$467,211 based on the present value of its scheduled cash flows and assumptions regarding market interest rates for unsecured debt of similar quality. The Company determined the fair value of the UHN Warrant to be \$0.48 per share, or \$264,775, using the Black Scholes Option Pricing Model and the following assumptions: market price per share: \$0.75; exercise price per share: \$1.00; risk-free interest rate: 0.66%; contractual term: 5 years; volatility: 89.9%; expected dividend rate: 0%. The Company recognized the difference between the sum of the fair values of the UHN Note and the UHN Warrant less the accounts payable balance due to UHN, \$182,500, as a non-cash loss on early extinguishment of debt in the accompanying Consolidated Statements of Operations and Comprehensive Income for the year ended March 31, 2013. The fair value of the warrant, \$264,775, which is treated as an equity instrument, was credited to additional paid in capital at the issuance date. The difference between the face value of the UHN Note and its fair value has been treated as a discount to the note and is being amortized over the term of the note using the interest method, resulting in an effective interest rate of 11.3% on the UHN Note. Through March 31, 2014, the Company has adjusted the UHN Warrant to increase the number of restricted shares available for purchase by 60,633 shares, based on interest accrued on the UHN Note through that date. The Company has recorded the fair value of the additional shares as a charge to interest expense and a corresponding credit to additional paid-in capital.

#### **Issuance of Long-Term Notes and Cancellation of Amounts Payable**

On February 25, 2011, the Company issued to Burr, Pilger, and Mayer, LLC ("*BPM*") an unsecured promissory note in the principal amount of \$98,674 for amounts payable in connection with valuation services provided to the Company by BPM. The BPM note bears interest at the rate of 7.5% per annum and has payment terms of \$1,000 per month, beginning March 1, 2011 and continuing until all principal and interest are paid in full. In addition, a payment of \$25,000 shall be due upon the sale of the Company or upon the Company completing a financing transaction of at least \$5.0 million during any three-month period, with the payment increasing to \$50,000 (or the amount then owed under the note, if less) upon the Company completing a financing of over \$10.0 million.

On April 29, 2011, the Company issued to Desjardins Securities, Inc. ("*Desjardins*") an unsecured promissory note in the principal amount of CDN \$236,000 for amounts payable for legal fees incurred by Desjardins in connection with investment banking services provided to the Company by Desjardins. The Desjardins note bears interest at 7.5% and will be due, along with all accrued but unpaid interest on the earliest of (i) June 30, 2014, (ii) the consummation of a Change of Control, as defined in the Desjardins note, and (iii) any failure to pay principal or interest when due. The Company was required to make payments of CDN \$4,000 per month beginning May 31, 2011, increasing to CDN \$6,000 per month on January 31, 2012. Beginning on January 1, 2012, the Company is also required to make payments equal to one-half of one percent (0.5%) of the net proceeds of all private or public equity financings closed during the term of the note. The note payable to Desjardins is due on June 30, 2014.

On May 5, 2011, the Company issued to McCarthy Tetrault LLP ("*McCarthy*") an unsecured promissory note in the principal amount of CDN \$502,797 for the amounts payable in connection with Canadian legal services provided to the Company. The McCarthy note bears interest at 7.5% and will be due, along with all accrued but unpaid interest on the earliest of (i) June 30, 2014, (ii) the consummation of a Change of Control, as defined in the McCarthy note, and (iii) any failure to pay principal or interest when due. The Company was required to make payments of CDN \$10,000 per month beginning May 31, 2011, which payment amounts increased to CDN \$15,000 per month on January 31, 2012. Beginning on January 1, 2012, the Company is also required to make payments equal to one percent (1%) of the net proceeds of all private or public equity financings closed during the term of the note. The note payable to McCarthy is due on June 14, 2014. However, see Note 17, *Subsequent Events*, regarding an amendment extending the maturity date of the McCarthy note and modifying other terms.

On August 30, 2012, the Company issued a promissory note in the principal amount of \$60,000 and 15,000 restricted shares of its common stock valued at a market price of \$0.94 per share to Progressive Medical Research in settlement of past due obligations for clinical research services in the amount of \$79,900. Under the terms of the settlement, the Company also agreed to make monthly cash payments of \$5,000 in August 2012 through December 2012. The promissory note bears interest at 7% per annum and requires payments of \$1,000 per month beginning January 15, 2013 until all principal and interest is paid in full. The note requires payment in full upon the sale of all or substantially all of the Company's assets or upon the Company completing a financing transaction, or series of transactions, resulting in gross proceeds to the Company of at least \$4.0 million in any three-month period, excluding proceeds from stock option or warrant exercises. The Company charged the loss on the settlement to interest expense.

On October 12, 2009, the Company issued a promissory note payable to the Regents of the University of California (“UC”) with a principal balance of \$90,000 in exchange for the cancellation of certain amounts payable under a research collaboration agreement (the “UC Note 1”). UC Note 1 was payable in monthly principal installments of \$15,000 through May 30, 2010. Interest on UC Note 1 at 10% per annum was payable on May 30, 2010. If the Company had completed an initial public offering of its stock prior to May 30, 2010, the remaining balance of UC Note 1 would have been payable within 10 business days after the initial public offering was consummated. The Company made the first two monthly installments totaling an aggregate of \$30,000. On February 25, 2010, the Company issued a promissory note payable to UC having a principal balance of \$170,000 in exchange for the cancellation of the remaining \$60,000 principal balance of UC Note 1 and certain amounts payable under a research collaboration agreement (“UC Note 2”). UC Note 2 was payable in monthly principal installments of \$15,000 through May 31, 2010, with the remaining \$125,000 plus all accrued and unpaid interest due on or before June 30, 2010. If the Company had completed an initial public offering of its stock prior to June 30, 2010, the remaining balance of the Note would have been payable within 10 business days after the initial public offering was consummated. On June 28, 2010, the Company amended UC Note 2 to extend the payment terms as follows: monthly installments of \$15,000 payable through May 31, 2010, \$10,000 due on June 30, 2010 and \$115,000 plus all accrued and unpaid interest due and payable on or before August 30, 2010. On August 25, 2010 and again on October 30, 2010, the Company amended UC Note 2 to extend the date of the final installment payment to be made under UC Note 2 to December 31, 2010 while adding a strategic premium to preserve license rights under the research collaboration agreement in exchange for an increase in the then-outstanding principal amount of UC Note 2 by \$15,000 to \$125,000. On December 22, 2010, the Company amended UC Note 2 a fourth time and decreased the monthly payment amount to \$5,000 with payments continuing until the outstanding balance of principal and interest is paid in full. The provision requiring the payment of the outstanding balance within 10 business days following the closing of an initial public offering remains unchanged.

On March 1, 2010, the Company issued a 10% promissory note with a principal balance of \$75,000 to National Jewish Health in exchange for the cancellation of certain amounts payable for accrued royalties. The principal balance plus all accrued and unpaid interest was initially due on or before December 31, 2010 (“March 2010 Note”). If the Company had completed an initial public offering of its stock prior to any installment dates, \$25,000 of the remaining balance of the March 2010 Note would have been due on June 30, 2010, and any remaining principal balance and all accrued and unpaid interest would have been payable within 90 business days after the initial public offering was consummated. On December 28, 2010, the Company amended the March 2010 Note and extended its maturity date to the first to occur of April 30, 2011 or 30 days following the closing of a financing with gross proceeds of \$5,000,000 or more. The Company has been in extended discussions with the holder of the March 2010 Note and anticipates that the Note will be cancelled in favor of certain amounts payable to the Company equal to or greater than the outstanding balance of the Note.

On August 13, 2010, the Company issued a 10% promissory note with a principal balance of \$40,962 to MicroConstants, Inc. in exchange for the cancellation of certain amounts payable for services rendered. Under the terms of this note, the Company is to make payments of \$1,000 per month with any unpaid principal or accrued interest due and payable upon the first to occur of (i) August 1, 2013, (ii) the issuance and sale of equity securities whereby the Company raises at least \$5,000,000 or (iii) the sale or acquisition of all or substantially all of the Company’s stock or assets.

## **10. Capital Stock**

### **Series A Preferred Stock**

In December 2011, the Company’s Board of Directors authorized the creation of a series of up to 500,000 shares of Series A Preferred Stock, par value \$0.001 (“Series A Preferred”). Each restricted share of Series A Preferred was initially convertible at the option of the holder into ten restricted shares of the Company’s common stock. The Series A Preferred ranks prior to the common stock for purposes of liquidation preference.

The Series A Preferred has no separate dividend rights, however, whenever the Board of Directors declares a dividend on the common stock, each holder of record of a share of Series A Preferred shall be entitled to receive an amount equal to such dividend declared on one share of common stock multiplied by the number of shares of common stock into which such share of Series A Preferred could be converted on the Record Date.

Except with respect to transactions upon which the Series A Preferred shall be entitled to vote separately as a class, the Series A Preferred has no voting rights. The restricted common stock into which the Series A Preferred is convertible shall, upon issuance, have all of the same voting rights as other issued and outstanding shares of the Company's common stock.

In the event of the liquidation, dissolution or winding up of the affairs of the Company, after payment or provision for payment of the debts and other liabilities of the Company, the holders of Series A Preferred then outstanding shall be entitled to receive an amount per share of Series A Preferred calculated by taking the total amount available for distribution to holders of all the Company's outstanding common stock before deduction of any preference payments for the Series A Preferred, divided by the total of (x), all of the then outstanding shares of the Company's common stock, plus (y) all of the shares of the Company's common stock into which all of the outstanding shares of the Series A Preferred can be converted before any payment shall be made or any assets distributed to the holders of the common stock or any other junior stock.

At March 31, 2014 and 2013, there were 500,000 restricted shares of Series A Preferred outstanding, all issued to Platinum. Platinum acquired the Series A Preferred pursuant to the transactions described below. In October 2012, Platinum's exchange rights with respect to the Series A Preferred were modified as described in the section entitled Modification of Series A Preferred Exchange Rights and Deemed Dividend, below.

· ***December 2011 Common Stock Exchange Agreement with Platinum***

On December 22, 2011, the Company entered into a Common Stock Exchange Agreement (the "*Exchange Agreement*") with Platinum, pursuant to which Platinum converted 484,000 restricted shares of the Company's common stock into 45,980 restricted shares of Series A Preferred (the "*Exchange*"). Each restricted share of Series A Preferred issued to Platinum was initially convertible into ten restricted shares of the Company's common stock. At the time of the Exchange, the Company determined the fair value of the common stock subject to the Exchange to be \$1.55 per share and has reflected the 484,000 restricted common shares as treasury stock on that basis in the accompanying Consolidated Balance Sheet at March 31, 2014 and 2013.

· ***December 2011 Note and Warrant Exchange Agreement with Platinum***

On December 29, 2011, the Company and Platinum entered into a Note and Warrant Exchange Agreement pursuant to which a promissory note in the face amount of \$4,000,000 plus accrued interest and all outstanding warrants issued to Platinum to purchase an aggregate of 1,599,858 restricted shares of the Company's common stock were cancelled in exchange for 391,075 restricted shares of Series A Preferred. Each share of Series A Preferred was initially convertible into ten shares of the Company's common stock. The Company issued 231,090 restricted shares of Series A Preferred to Platinum in connection with the note cancellation based on the sum of the \$4,000,000 principal balance of the note plus accrued but unpaid interest through May 11, 2011 adjusted for a 125% conversion premium, net of the \$1,719,800 aggregate exercise price of the 1,599,858 outstanding warrants held by Platinum, and a contractual conversion basis of \$1.75 per common share, all adjusted for the initial 1:10 Series A Preferred to common exchange ratio. An additional 159,985 restricted shares of Series A Preferred were issued to Platinum in connection with the warrant exercise and exchange to acquire the common shares issued upon the warrant exercise.

· ***2012 Exchange Agreement with Platinum***

On June 29, 2012, the Company and Platinum entered into an Exchange Agreement (the "*2012 Platinum Exchange Agreement*") pursuant to which the Company issued Platinum 62,945 restricted shares of Series A Preferred in exchange for 629,450 restricted shares of common stock then owned by Platinum, in consideration for Platinum's agreement to purchase from the Company the July 2012 Platinum Note, as described in Note 9, *Convertible Promissory Notes and Other Notes Payable*. The Company estimated the fair value of the Series A Preferred shares tendered to Platinum under the terms of the 2012 Platinum Exchange Agreement at \$736,400 (\$1.17 per share on a common share equivalent basis). The common shares exchanged for shares of Series A Preferred are treated as treasury stock on that basis in the accompanying Consolidated Balance Sheet at March 31, 2014 and 2013.

#### **Modification of Series A Preferred Exchange Right and Deemed Dividends**

Pursuant to the October 2012 Agreement described more completely in Note 9, *Convertible Promissory Notes and Other Notes Payable*, Platinum's exchange rights in the Series A Preferred were modified such that Platinum now has the right and option to exchange the 500,000 restricted shares of the Company's Series A Preferred that it holds for (i) a total of 15,000,000 restricted shares of the Company's common stock, and (ii) a five-year warrant to purchase 7,500,000 restricted shares of the Company's common stock at an initial exercise price of \$1.50 per share (the "*Series A Exchange Warrant*"). See the section entitled Modification of Platinum Warrants, later in this note, for a description of the subsequent modification of the exercise price of the Series A Preferred Exchange Warrant. The modification of the exchange ratio resulted in a deemed dividend of \$7,125,000 to Platinum for accounting purposes, which has been reflected in the accompanying Consolidated Statement of Operations and Comprehensive Loss for the fiscal year ended March 31, 2013. The amount of the deemed dividend in the accompanying Consolidated Statement of Operations and Comprehensive Loss for the fiscal year ended March 31, 2013 was determined as the sum of (i) the value of the 10 million incremental shares to which Platinum is entitled pursuant to the October 2012 Agreement valued at the \$0.75 per share quoted market price for the Company's common stock on the date of the agreement, an aggregate of \$7.5 million, adjusted for an expected 95% probability of exercise of the exchange rights by Platinum, or \$7,125,000; and (ii) the fair value of the Series A Exchange Warrant at the date of the October 2012 Agreement, determined to be \$0.43 per share, or \$3,228,700, on the date of the agreement using the Black Scholes Option Pricing Model and the following assumptions: market price per share: \$0.75; exercise price per share: \$1.50; risk-free interest rate: 0.67%; contractual term: 5 years; volatility: 89.9%; expected dividend rate: 0%; and adjusted for an expected 95% probability of exercise of the exchange rights by Platinum. The adjusted fair value of the warrant, \$3,068,200 was recognized as a component of the Warrant Liability in the in the accompanying Consolidated Balance Sheet at March 31, 2013, with a corresponding charge to Additional paid-in capital.

The fair value of the Series A Exchange Warrant was re-measured as of March 31, 2013 at \$4,406,000 and the \$1,337,800 increase in fair value since the inception of the October 2012 Agreement is reflected as a component of the Change in Warrant Liability in the accompanying Consolidated Statement of Operations and Comprehensive Loss for the fiscal year ended March 31, 2013. The fair value of the Series A Exchange Warrant was re-measured as of March 31, 2014 at \$2,058,600 and the \$2,347,400 decrease in fair value since March 31, 2013 is reflected as a component of the Change in Warrant Liability in the accompanying Consolidated Statement of Operations and Comprehensive Loss for the fiscal year ended March 31, 2014.

#### **Conversion of Pre-Merger Preferred Stock**

On May 11, 2011, concurrent with the Merger, all holders of VistaGen California's then-outstanding preferred stock converted all of their preferred shares into 2,884,655 restricted shares of VistaGen California common stock so that, at the completion of the Merger, VistaGen California had no preferred stock outstanding. All shares of VistaGen California common stock were then acquired by the Company in connection with the Merger.

#### **Common Stock**

##### **Autilion AG Securities Purchase Agreement**

On April 8, 2013, the Company entered into a Securities Purchase Agreement (as amended, the "*Securities Purchase Agreement*") with Autilion AG, a company organized and existing under the laws of Switzerland ("*Autilion*"). On April 12, 2013, Autilion assigned the Securities Purchase Agreement to its affiliate, Bergamo Acquisition Corp. PTE LTD, a corporation organized and existing under the laws of Singapore ("*Bergamo Singapore*"). On April 30, 2013, the Company and Bergamo Singapore amended the Securities Purchase Agreement to modify the investment dates. On June 27, 2013, the Company, Autilion and Bergamo Singapore further amended the Securities Purchase Agreement to vacate Autilion's April 2013 assignment of the Securities Purchase Agreement to Bergamo Singapore, provide for an initial closing under the Securities Purchase Agreement, and amend certain of the investment dates under the Securities Purchase Agreement. Under the terms of the Securities Purchase Agreement, Autilion is contractually obligated to purchase an aggregate of 72.0 million restricted shares of the Company's common stock at a purchase price of \$0.50 per share for aggregate cash consideration of \$36.0 million, in a series of closings scheduled to have occurred by September 30, 2013 (the "*Autilion Financing*"). Through March 31, 2014, Autilion had completed only a nominal initial closing under the Securities Purchase Agreement, in the amount of \$25,000, and the Company had issued 50,000 restricted shares of its common stock. As of the date of this report, Autilion has not completed a subsequent closing of the Autilion Financing. Therefore, Autilion is in default under the Securities Purchase Agreement, and the Company can provide no assurance that Autilion will complete a material closing under the Securities Purchase Agreement.



**Winter 2013/2014 Unit Private Placement**

Between August 2013 and March 2014, the Company entered into securities purchase agreements with accredited investors pursuant to which it sold to such investors Units each consisting of (i) a 10% convertible promissory note in the face amount of \$5,000 maturing on July 30, 2014 (the “2013/2014 Unit Note”); (ii) 10,000 restricted shares of the Company’s common stock (the “2013/2014 Unit Stock”); and (iii) a warrant exercisable through July 30, 2016 to purchase 10,000 restricted shares of the Company’s common stock at an exercise price of \$1.00 per share (the “2013/2014 Unit Warrant”). The Company issued 2013/2014 Unit Notes in the aggregate face amount of \$1,007,500; an aggregate of 2,015,000 restricted shares of 2013/2014 Unit Stock, and warrants to purchase an aggregate of 2,015,000 restricted shares of the Company’s common stock pursuant to the 2013/2014 Unit Warrants, and received cash proceeds of \$1,007,500, including \$50,000 in lieu of repayment of previous advances to the Company made by one of its executive officers. The 2013/2014 Unit Notes and related accrued interest are convertible into restricted shares of the Company’s common stock at a conversion price of \$0.50 per share at or prior to maturity, at the option of each investor.

The Company allocated the proceeds from the sale of the Units to the various securities in each Unit based on their relative fair value on the dates of the sales. As described in Note 8, *Convertible Promissory Notes and Other Notes Payable*, based on the short-term nature of the 2013/2014 Unit Notes, the Company determined that fair value of the 2013/2014 Unit Notes was equal to their face value. The Company determined the fair value of the 2013/2014 Unit Stock based on the quoted market price of its stock on the date of the Unit sale. The Company calculated the fair value of the 2013/2014 Unit Warrants using the Black Scholes Option Pricing Model and the weighted average assumptions indicated in the table below. The table below also presents the aggregate allocation of the Unit sales proceeds based on the relative fair values of the 2013/2014 Unit Stock, 2013/2014 Unit Warrants and 2013/2014 Unit Notes at the Unit sales date.

| Warrant Shares Issued | 2013/2014 Unit Warrants                              |                |              |                         |            |               |         | Per Share Fair Value of Warrant | Aggregate Fair Value of Unit Warrants | Aggregate Proceeds of Unit Sales | Aggregate Allocation of Proceeds Based on Relative Fair Value of: |            |           |
|-----------------------|--|----------------|--------------|-------------------------|------------|---------------|---------|---------------------------------|---------------------------------------|----------------------------------|---|------------|-----------|
|                       | Weighted Average Issuance Date Valuation Assumptions |                |              |                         |            |               |         |                                 |                                       |                                  | Unit Stock  | Unit       |           |
|                       | Market Price   | Exercise Price | Term (Years) | Risk free Interest Rate | Volatility | Dividend Rate | Warrant |                                 |                                       |                                  |   | Warrant    | Unit Note |
| 2,015,000             | \$ 0.45  | \$ 1.00        | 2.68         | 0.58%                   | 76.29%     | 0.0%          | \$ 0.13 | \$ 254,700                      | \$ 1,007,500                          | \$ 415,000                       | \$ 111,400  | \$ 481,100 |           |

**2014 Unit Private Placement**

During March 2014, the Company entered into a securities purchase agreement with an accredited investor pursuant to which it sold to the investor Units consisting of (i) a 10% subordinated convertible promissory note in the aggregate face amount of \$50,000 maturing on March 31, 2015 (the “*Spring 2014 Unit Note*”); (ii) an aggregate of 50,000 restricted shares of the Company’s common stock (the “*2014 Unit Stock*”); and (iii) a warrant exercisable through December 31, 2015 to purchase an aggregate of 50,000 restricted shares of the Company’s common stock at an exercise price of \$0.50 per share (the “*2014 Unit Warrant*”). (See Note 17, *Subsequent Events*, for information regarding additional Units issued in connection with the 2014 Unit Private Placement.) The 2014 Unit Note and its related accrued interest (the “*Outstanding Balance*”) is convertible into restricted shares of the Company’s common stock at a conversion price of \$0.50 per share at or prior to maturity, at the option of the investor, or, upon the Company’s consummation of either (i) an equity or equity-based public offering registered with the U.S. Securities and Exchange Commission (“*SEC*”), or (ii) an equity or equity-based private financing, or series of such financing transactions, not registered with the SEC, in each case resulting in gross proceeds to the Company of at least \$10.0 million prior to Maturity (a “*Qualified Financing*”), the Outstanding Balance of the 2014 Unit Note will, subject to certain conditions, automatically convert into the securities sold in the Qualified Financing, based on the following formula: (the Outstanding Balance as of the closing of the Qualified Financing) x 1.25 / (the per security price of the securities sold in the Qualified Financing).

The Company allocated the proceeds from the sale of the 2014 unit to the 2014 Unit Notes, the common stock and the warrants comprising the units based on the relative fair value of the individual securities in the unit on the date of the unit sale. Based on the short-duration of the 2014 Unit Note and its other terms, the Company determined that the fair value of the 2014 Unit Note at the date of issuance was equal to its face value. The Company determined the fair value of the 2014 Unit Stock based on the quoted market price of its stock on the date of the unit sale. The Company calculated the fair value of the 2014 Unit Warrant using the Black Scholes Option Pricing Model and the assumptions indicated in the table below. The table below also presents the aggregate allocation of the Unit sale proceeds based on the relative fair values of the 2014 Unit Stock, 2014 Unit Warrants and 2014 Unit Notes at the unit sale date.

| Warrant Shares Issued | 2014 Unit Warrants                                   |                |              |                         |            |               | Per Share Fair Value of Warrant | Aggregate Fair Value of Unit Warrants | Aggregate Proceeds of Unit Sales | Aggregate Allocation of Proceeds Based on Relative Fair Value of: |              |           |
|-----------------------|--|----------------|--------------|-------------------------|------------|---------------|---------------------------------|---------------------------------------|----------------------------------|---|--------------|-----------|
|                       | Weighted Average Issuance Date Valuation Assumptions |                |              |                         |            |               |                                 |                                       |                                  | Unit Stock  | Unit Warrant | Unit Note |
|                       | Market Price   | Exercise Price | Term (Years) | Risk free Interest Rate | Volatility | Dividend Rate |                                 |                                       |                                  |   |              |           |
| 50,000                | \$ 0.46  | \$ 0.50        | 2.80         | 0.66%                   | 74.94%     | 0.0%          | \$ 0.21                         | \$ 10,400                             | \$ 50,000                        | \$ 13,800   | \$ 6,200     | \$ 30,000 |

**2012/2013 Unit Private Placement**

Between September 2012 and March 2013, the Company sold 2,366,330 Units in a private placement to accredited investors and received cash proceeds of \$1,133,200 and settled outstanding amounts payable for legal fees in lieu of cash payment for services in the amount of \$50,000. The Units were sold for \$0.50 per Unit and each Unit consisted of one restricted share of the Company’s common stock and a five year warrant to purchase one half (1/2) of one restricted share of the Company’s common stock at an exercise price of \$1.50 per share. In addition, in November 2012, pursuant to an Exchange Agreement, the holders of the 2012 Notes exchanged the aggregate amount of \$678,600 due under the terms of such notes for Units consisting of 1,357,281 restricted shares of the Company’s common stock and five-year warrants to purchase 678,641 restricted shares of the Company’s common stock at an exercise price of \$1.50 per share. The gross cash proceeds from this private placement of Units satisfied the Additional Financing Requirement under the October 2012 Agreement with Platinum, as amended, described in Note 9, *Convertible Promissory Notes and Other Notes Payable*, entitling the Company to sell and requiring Platinum to purchase senior secured convertible promissory notes in the aggregate face amount of \$1.0 million in February and March 2013. In connection with the settlement of legal fees payable by issuing Units, the Company recorded a loss on extinguishment of debt of \$30,800 based on the fair market value of the common shares and the warrant comprising the Unit on the effective date of the settlement.

#### Common Stock Grants

In April 2012, the Company entered into a contract for investor relations consulting services pursuant to which it granted three-year warrants to purchase 50,000 restricted shares of the Company's common stock at an exercise price of \$2.80 per share. The Company valued the warrant at \$69,200 using the Black Scholes Option Pricing Model and the following assumptions: market price per share: \$2.74; exercise price per share: \$2.80; risk-free interest rate: 0.50%; contractual term: 3 years; volatility: 79.09%; expected dividend rate: 0%. The fair value of the warrant was initially recorded as a prepaid expense and was to be expensed over one year in accordance with the terms of the contract. The contract and related warrant were cancelled in October 2012 and the remaining amount attributable to the fair value of the warrant was expensed.

In June 2012, the Company entered into a contract for investor relations and public company support services through December 31, 2012 pursuant to which it granted 280,000 restricted shares of its common stock valued at \$238,000 based on the grant date quoted market price of \$0.85 per share and warrants to purchase 100,000 restricted shares of its common stock at an exercise price of \$3.00 per share through December 31, 2015. The Company valued the warrant at \$25,800 using the Black Scholes Option Pricing Model and the following assumptions: market price per share: \$0.85; exercise price per share: \$3.00; risk-free interest rate: 0.46%; contractual term: 3.53 years; volatility: 84.279%; expected dividend rate: 0%. The fair value of the stock and the warrant was recorded as a prepaid expense and is being expensed over the approximately six-month term of the contract.

In June 2012, the Company entered into a contract for investor relations consulting services pursuant to which it granted 120,000 restricted shares of its common stock valued at \$102,000 based on the grant date quoted market price of \$0.85 per share. The fair value of the stock was recorded as a prepaid expense and is being expensed over the approximately six-month term of the contract.

In August 2012, the Company modified an existing warrant and issued a new warrant to Morrison & Foerster as additional consideration for the Restructuring Agreement, as disclosed in Note 8, *Convertible Promissory Notes and Other Notes Payable*. As described in Note 8, the Company has treated the aggregate of the incremental value of the Amended M&F Warrant and the fair value of the New M&F Warrant as a discount to the Replacement Notes, which discount is being amortized to interest expense using the effective interest rate method over the term of the Replacement Notes.

During August 2012, the Company issued 88,235 restricted shares of its common stock valued at a market price of \$1.01 per share in settlement of a past-due obligation for business development consulting services in the amount of \$25,000. The Company charged the loss on the settlement to interest expense. As disclosed in Note 8, *Convertible Promissory Notes and Other Notes Payable*, in August 2012, the Company issued a promissory note in the principal amount of \$60,000 and 15,000 restricted shares of its common stock valued at \$0.94 per share in settlement of its past due obligation for AV-101 clinical development services.

In February 2013, the Company entered into a contract for various strategic consulting services pursuant to which it granted a five-year warrant to purchase 25,000 shares of the Company's common stock at an exercise price of \$1.50 per share. The Company valued the warrant at \$11,200 using the Black Scholes Option Pricing Model and the following assumptions: market price per share: \$0.79; exercise price per share: \$1.50; risk-free interest rate: 0.84%; contractual term: 5 years; volatility: 87.14%; expected dividend rate: 0%, and expensed the fair value of the warrant during the fourth quarter of the fiscal year ended March 31, 2013.

**Warrants to Purchase Common Stock**

**Warrant Grants and Exercises**

On March 19, 2014, the Company granted five -year warrants to purchase an aggregate of 415,000 restricted shares of the Company's unregistered common stock at an exercise price of \$0.50 per share to the independent members of its Board of Directors and certain of its officers. The warrants become exercisable for 50% of the shares on April 1, 2014, 25% of the shares on April 1, 2015 and 25% of the shares on April 1, 2016, provided that the warrant will become fully vested upon a change in control of the Company, as defined, or the consummation by the Company and a third party of a license or sale transaction involving at least one new drug rescue variant. The Company valued the warrants at \$120,800 using the Black Scholes Option Pricing Model and the following assumptions: market price per share: \$0.46; exercise price per share: \$0.50; risk-free interest rate: 1.75%; contractual term: 5 years; volatility: 80.57%; expected dividend rate: 0%. The Company recognized stock compensation expense of \$60,400 related to the grants in the fourth quarter of the fiscal year ended March 31, 2014.

In October 2013, the Company issued new warrants to purchase an aggregate of 237,500 shares of its restricted common stock to certain former warrant holders whose warrants to purchase an equivalent number of shares of the Company's restricted common stock at an exercise price of \$1.50 per share had recently expired. The Company calculated the fair value of the new warrants as \$0.03 per share, using the Black-Scholes Option Pricing Model and the following assumptions. market price per share: \$0.50; exercise price per share: \$1.50; risk-free interest rate: 0.20%; contractual term: 1.32 years; volatility: 73.5%; and expected dividend rate: 0%. The Company recorded the aggregate fair value of \$7,400 for the new warrants in general and administrative expense in the accompanying Consolidated Statements of Operations and Comprehensive Loss for the fiscal year ended March 31, 2014, with a corresponding credit to additional paid-in capital, an equity account.

On March 3, 2013, the Company granted ten-year warrants to purchase an aggregate of 3,000,000 restricted shares of the Company's unregistered common stock at an exercise price of \$0.64 per share to the independent members of its Board of Directors and certain of its officers. The warrants become exercisable for 50% of the shares on April 1, 2013, 25% of the shares on April 1, 2014 and 25% of the shares on April 1, 2015, provided that the warrant will become fully vested upon a change in control of the Company, as defined, or the consummation by the Company and a third party of a license or sale transaction involving at least one new drug rescue variant. The Company valued the warrants at \$1,604,800 using the Black Scholes Option Pricing Model and the following assumptions: market price per share: \$0.64; exercise price per share: \$0.64; risk-free interest rate: 1.86%; contractual term: 10 years; volatility: 84.73%; expected dividend rate: 0%. The Company recognized stock compensation expense of \$802,400 related to the grants in the fourth quarter of the fiscal year ended March 31, 2013.

In June 2013 and October 2013, the Company's Chief Executive Officer partially exercised an outstanding warrant to purchase 50,000 and 10,000 restricted shares of the Company's common stock at an exercise price of \$0.64 per share, respectively, and the Company received cash proceeds of \$32,000 and \$10,000, respectively, from the exercises.

**Modification of Warrants Held by Platinum**

Effective on May 24, 2013, the Company and Platinum entered into an Amendment and Waiver Agreement (the "*Amendment and Waiver*") pursuant to which the Company agreed to reduce the exercise price of the Exchange Warrant and the Investment Warrants issued to Platinum in October 2012 and February 2013 and March 2013 (collectively, the "*Warrants*") from \$1.50 per share to \$0.50 per share in consideration for Platinum's agreement to waive its rights for any increase in the number of shares of common stock issuable under the adjustment provisions of the Exchange Warrant and the Investment Warrants that would otherwise occur from (i) the Company's sale of shares of its common stock at a price of \$0.50 per share in connection with the Autilion Financing; (ii) the March 2013 grant of warrants to certain of the Company's officers and independent directors to purchase an aggregate of 3.0 million restricted shares of common stock at an exercise price of \$0.64 per share; and (iii) the Company's issuance of restricted shares of its common stock resulting in gross proceeds not to exceed \$1.5 million in connection with the exercise by warrant holders, by no later than June 30, 2013, subsequently extended to July 30, 2013, of previously outstanding warrants for which the Company may reduce the exercise price to not less than \$0.50 per share. (See "*Other Warrant Modifications and Exercises*" below.)

As described in Note 4, *Fair Value Measurements* and in Note 9, *Convertible Promissory Notes and Other Notes Payable*, the Company re-measures the fair value of the Exchange Warrant, the Investment Warrants and the July 2013 Warrant at the end of each quarterly reporting period. The fair value re-measurement at June 30, 2013 incorporated the modification of the exercise price resulting from the Amendment and Waiver and the corresponding adjustment was reflected as a component of the Warrant Liability at that date. The Company also re-measures at the end of each reporting period the fair value of the Series A Exchange Warrant which is contingently issuable to Platinum upon the exchange of its shares of the Company's Series A Preferred Stock into shares of the Company's restricted common stock. At March 31, 2014 and 2013, the Company determined the fair values of the Exchange Warrant, the Investment Warrants, the July 2013 Warrant (2014 only) and the Series A Preferred Exchange Warrant to be a weighted average of \$0.27 and \$0.59 per share, respectively, or an aggregate of \$2,973,900 and \$6,394,000, which amounts are reflected as Warrant Liability in the accompanying Consolidated Balance Sheets at March 31, 2014 and 2013, respectively. The Company determined the fair value of the warrants at March 31, 2014 using a Monte Carlo simulation model assuming the exercise price of the warrants to be the lower of (i) \$0.50 per share or (ii) the projected market price of the Company's common stock as determined by the simulation model and the other assumptions indicated in the table below. The Company determined the fair value of the warrants at March 31, 2013 using the Black Scholes Option Pricing Model and the assumptions indicated in the table below.

|  | March 31, |                |      |                |
|--|-----------|----------------|------|----------------|
|  | 2014      |                | 2013 |                |
| Market price of common stock               | \$        | 0.46           | \$   | 0.83           |
| Exercise price per share                   | \$        | 0.49 to \$0.50 | \$   | 0.50           |
| Risk-free interest rate                    |           | 1.73           |      | 0.77           |
| Volatility                                 |           | 75             |      | 85             |
| Term (years)                               |           | 3.5 to 5.0     |      | 4.5 to 5.0     |
| Dividend rate                              |           | 0              |      | 0              |
| Probability of Series A Preferred exchange |           | 95             |      | 95             |
| Fair value per share                       | \$        | 0.26 to \$0.29 | \$   | 0.59 to \$0.62 |

**Other Warrant Modifications and Exercises**

During the months of June and July 2013, the Company offered certain long-term warrant holders the opportunity to exercise warrants having an exercise price of \$1.50 per share to purchase shares of the Company's restricted common stock at a reduced exercise price of \$0.50 per share through July 30, 2013. Warrant holders exercised warrants to purchase an aggregate of 528,370 restricted shares of the Company's common stock and the Company received cash proceeds of \$264,200. In addition, certain warrant holders exercised modified warrants to purchase 16,646 restricted shares of the Company's common stock in lieu of payment by the Company in satisfaction of amounts due for professional services in the aggregate amount of \$8,300. The Company calculated the fair value of the warrants exercised immediately before and after the modifications and determined that the fair value of the warrants exercised decreased.

In October 2013 the Company modified certain outstanding warrants held by its long-term investors and consultants to purchase an aggregate of 1,292,778 restricted shares of the Company's common stock to reduce the exercise price of the warrants to \$0.50 per share and, for warrants scheduled to expire on December 31, 2013, extend the exercise term of the warrants until January 31, 2015, generally without modifying the exercise price. The Company calculated the fair value of the warrants immediately before and after the modifications and determined that the fair value of the warrants increased by \$77,800, which is reflected in general and administrative expense in the accompanying Consolidated Statements of Operations and Comprehensive Loss for the fiscal year ended March 31, 2014. The warrants subject to the exercise price modifications and term extensions were valued using the Black-Scholes Option Pricing Model and the following assumptions:

| Assumption:                                  | Pre-modification |             | Post-modification |             |
|--|------------------|-------------|-------------------|-------------|
| Market price per share at modification date  | \$               | 0.50        | \$                | 0.50        |
| Exercise price per share (weighted average)  | \$               | 1.50        | \$                | 1.23        |
| Risk-free interest rate (weighted average)   |                  | 0.33%       |                   | 0.44%       |
| Contractual term in years (weighted average) |                  | 1.40        |                   | 2.10        |
| Volatility (weighted average)                |                  | 74.4%       |                   | 75.8%       |
| Dividend rate                                |                  | 0.0%        |                   | 0.0%        |
| <b>Weighted Average Fair Value per share</b> | <b>\$</b>        | <b>0.05</b> | <b>\$</b>         | <b>0.11</b> |

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In December 2013, the Company modified additional outstanding warrants held by certain of its long-term investors, consultants, and members of management and its Board of Directors to purchase an aggregate of 1,260,251 restricted shares of its common stock to reduce the exercise price of the warrants to \$0.50 per share and, in limited cases, extend the exercise term of the warrants. The Company calculated the fair value of the warrants immediately before and after the modifications and determined that the fair value of the warrants increased by \$344,000, which is reflected in general and administrative expense in the accompanying Consolidated Statements of Operations and Comprehensive Loss for the fiscal year ended March 31, 2014. The warrants subject to the exercise price modifications and term extensions were valued using the Black-Scholes Option Pricing Model and the following assumptions:

| <b>Assumption:</b>                           | <b>Pre-modification</b> |             | <b>Post-modification</b> |             |
|--|-------------------------|-------------|--------------------------|-------------|
| Market price per share at modification date  | \$                      | 0.40        | \$                       | 0.40        |
| Exercise price per share (weighted average)  | \$                      | 1.67        | \$                       | 0.50        |
| Risk-free interest rate (weighted average)   |                         | 0.51%       |                          | 0.57%       |
| Contractual term in years (weighted average) |                         | 2.06        |                          | 2.34        |
| Volatility (weighted average)                |                         | 73.6%       |                          | 74.4%       |
| Dividend rate                                |                         | 0.0%        |                          | 0.0%        |
| <b>Weighted Average Fair Value per share</b> | <b>\$</b>               | <b>0.05</b> | <b>\$</b>                | <b>0.14</b> |

In February 2014, the Company modified additional outstanding warrants held by certain of its long-term investors to purchase an aggregate of 574,432 restricted shares of its common stock primarily to extend the exercise term of the warrants, and, in limited cases, to reduce the exercise price from \$1.50 per share to \$0.50 per share. The Company calculated the fair value of the warrants immediately before and after the modifications and determined that the fair value of the warrants increased by \$29,800, which is reflected in general and administrative expense in the accompanying Consolidated Statements of Operations and Comprehensive Loss for the fiscal year ended March 31, 2014. The warrants subject to the exercise price modifications and term extensions were valued using the Black-Scholes Option Pricing Model and the following assumptions:

| <b>Assumption:</b>                           | <b>Pre-modification</b> |             | <b>Post-modification</b> |             |
|--|-------------------------|-------------|--------------------------|-------------|
| Market price per share at modification date  | \$                      | 0.46        | \$                       | 0.46        |
| Exercise price per share (weighted average)  | \$                      | 1.41        | \$                       | 1.19        |
| Risk-free interest rate (weighted average)   |                         | 0.07%       |                          | 0.18%       |
| Contractual term in years (weighted average) |                         | 0.40        |                          | 1.34        |
| Volatility (weighted average)                |                         | 68.7%       |                          | 69.9%       |
| Dividend rate                                |                         | 0.0%        |                          | 0.0%        |
| <b>Weighted Average Fair Value per share</b> | <b>\$</b>               | <b>0.01</b> | <b>\$</b>                | <b>0.06</b> |

In February 2013, the Company modified certain outstanding warrants to purchase an aggregate of 1,706,709 restricted shares of the Company's common stock at exercise prices in excess of \$1.50 per share to reduce the exercise price to \$1.50 per share. The Company determined that the increase in the fair value of the warrants exercised was \$67,500, which is reflected in general and administrative expense in the accompanying Consolidated Statements of Operations and Comprehensive Loss for the year ended March 31, 2013. The warrants subject to the exercise price modification were valued using the Black-Scholes Option Pricing Model and the following assumptions:

| <b>Assumption:</b>                           | <b>Pre-modification</b> |             | <b>Post-modification</b> |             |
|--|-------------------------|-------------|--------------------------|-------------|
| Market price per share (weighted average)    | \$                      | 0.60        | \$                       | 0.60        |
| Exercise price per share (weighted average)  | \$                      | 2.51        | \$                       | 1.50        |
| Risk-free interest rate (weighted average)   |                         | 0.21%       |                          | 0.21%       |
| Expected term in years (weighted average)    |                         | 1.38        |                          | 1.38        |
| Volatility (weighted average)                |                         | 80.8%       |                          | 80.8%       |
| Dividend rate                                |                         | 0.0%        |                          | 0.0%        |
| <b>Weighted Average Fair Value per share</b> | <b>\$</b>               | <b>0.03</b> | <b>\$</b>                | <b>0.07</b> |

Between May and June 30, 2012, the Company offered certain warrant holders the opportunity to exercise their warrants to purchase restricted shares of the Company's common stock at reduced exercise prices. The Company subsequently extended the offer through August 2012. Warrant holders exercised warrants to purchase an aggregate of 524,056 restricted shares of the Company's common stock and the Company received cash proceeds of \$262,000. In addition, certain warrant holders exercised warrants to purchase 25,000 restricted shares of the Company's common stock in lieu of payment by the Company in satisfaction of amounts due for services in the aggregate amount of \$12,500. For every three discounted warrant shares exercised by the warrant holders, the Company granted a three-year warrant to purchase one restricted share of its common stock at an exercise price of \$3.00 per share.

The Company calculated the fair value of the warrants exercised immediately before and after the May 18, 2012 Board of Directors approval of the modification offer, and on the exercise date for the exercises occurring after June 30, 2012, and determined that the increase in the fair value of the warrants exercised was \$440,700, which is reflected in general and administrative expense in the accompanying Consolidated Statements of Operations and Comprehensive Loss for the year ended March 31, 2013. The warrants subject to the exercise price modifications were valued using the Black-Scholes Option Pricing Model and the following assumptions:

| <b>Assumption:</b>                           | <b>Pre-modification</b> |             | <b>Post-modification</b> |             |
|--|-------------------------|-------------|--------------------------|-------------|
| Market price per share (weighted average)    | \$                      | 1.95        | \$                       | 1.95        |
| Exercise price per share (weighted average)  | \$                      | 2.75        | \$                       | 0.50        |
| Risk-free interest rate (weighted average)   |                         | 0.29%       |                          | 0.06%       |
| Expected term in years (weighted average)    |                         | 1.93        |                          | 0.12        |
| Volatility (weighted average)                |                         | 78.0%       |                          | 85.7%       |
| Dividend rate                                |                         | 0.0%        |                          | 0.0%        |
| <b>Weighted Average Fair Value per share</b> | <b>\$</b>               | <b>0.64</b> | <b>\$</b>                | <b>1.45</b> |

In connection with the foregoing exercises, the Company issued three-year warrants to purchase 183,025 restricted shares of the Company's common stock at an exercise price of \$3.00 per share. The Company valued these warrants at \$35,900 using the Black Scholes Option Pricing Model and the following assumptions: weighted average market price per share: \$0.89; exercise price per share: \$3.00; risk-free interest rate: 0.42%; contractual term: 3.0 years; volatility: 78.04%; expected dividend rate: 0%. The fair value of the warrants was charged to interest expense.

In making its fair value determinations for both warrant modifications and new grants using the Black Scholes Option Pricing Model, the Company utilizes the following principles in selecting its input assumptions. The market price per share is based on the quoted market price of the Company's common stock on the Over-the-Counter Bulletin Board on the date of the modification or grant. Because of its short history as a public company, the Company estimates stock price volatility based on the historical volatilities of a peer group of public companies over the contractual or remaining contractual term of the warrant. The contractual term of the warrant is determined based on the grant or modification date and the latest date on which the warrant can be exercised under its terms or under the terms of the discounted exercise price offer. The risk-free rate of interest is based on the quoted constant maturity rate for U.S Treasury Bills on the date of the grant or modification for the term corresponding with the contractual term or remaining term of the warrant. The dividend rate is zero as the Company has not paid and does not expect to pay dividends in the near future.

**Warrants Outstanding**

The following table summarizes outstanding warrants to purchase restricted shares of the Company's common stock as of March 31, 2014. The weighted average exercise price of outstanding warrants at March 31, 2014 was \$0.87 per share.

| <b>Exercise Price per Share</b> | <b>Expiration Date</b>  | <b>Weighted Average Years to Expiration</b> | <b>Shares Subject to Purchase at March 31, 2014</b> |
|---------------------------------|-------------------------|---|---|
| \$ 0.50                         | 12/31/2014 to 3/19/2019 | 3.34  | 5,856,983   |
| \$ 0.64                         | 3/3/2023                | 8.92  | 2,940,000   |
| \$ 0.88                         | 5/31/2015               | 1.17  | 15,428  |
| \$ 1.00                         | 7/30/2016 to 9/30/2017  | 3.05  | 5,326,029   |
| \$ 1.25                         | 12/31/2014 to 5/31/2015 | 0.8   | 50,280  |
| \$ 1.50                         | 11/4/2014 to 3/4/2018   | 2.45  | 2,353,052   |
| \$ 2.00                         | 9/15/2017               | 3.46  | 425,000   |
| \$ 2.50                         | 5/31/2015               | 1.17  | 42,443  |
| \$ 2.625                        | 1/31/2015               | 0.84  | 61,418  |
| \$ 3.00                         | 2/13/2016               | 1.87  | 25,000  |
|                                 |                         | 4.07  | <u>17,095,633</u>                                   |

**Note Receivable from Sale of Company Securities**

In May 2011, the Company accepted a \$500,000 short-term note from an investor in payment for shares of the Company's common stock sold to the investor in a private placement transaction. In October 2011, the Company restructured the note to extend the repayment term through September 1, 2012 and to increase the interest rate to 5% per annum. On November 8, 2012 the Company and the investor again amended the note to require payment of the outstanding balance of \$256,000, reflecting unpaid principal and accrued interest, in twenty-four monthly payments of \$11,000 beginning in December 2012 and continuing through November 2014, with a final payment of the remaining unpaid principal and interest due in December 2014. The outstanding principal balance of the note receivable at March 31, 2014 and 2013 was \$198,100 and \$209,100, respectively.



**Reserved Shares**

At March 31, 2014, the Company has reserved shares of its common stock for future issuance as follows:

|  |                    |
|--|--------------------|
| Upon exchange of all shares of Series A Preferred Stock currently issued and outstanding <sup>(1)</sup>  | 15,000,000         |
| Warrant shares issuable to Platinum upon exercise of common stock warrant upon exchange of Series A preferred stock under the terms of the October 11, 2012 Note Purchase and Exchange Agreement                           | 7,500,000          |
| 110% of shares issuable upon conversion of 10% convertible Exchange Note and Investment Notes issued to Platinum in October 2012, February 2013 and March 2013, including interest accrued through maturity <sup>(2)</sup> | 11,227,423         |
| <b>Pursuant to warrants to purchase common stock:</b>  |                    |
| Subject to outstanding warrants  | 17,095,633         |
| Issuable pursuant to accrued interest through maturity on outstanding promissory notes issued to Morrison & Foerster, Cato Research Ltd., and University Health Network  | 938,971            |
|  | 18,034,604         |
| <b>Pursuant to stock incentive plans:</b>  |                    |
| Subject to outstanding options under the 2008 and 1999 Stock Incentive Plans   | 4,249,271          |
| Available for future grants  | 735,200            |
|  | 4,984,471          |
| Upon conversion of notes and accrued interest issued pursuant to the Winter 2013/2014 Private Placement of Units   | 2,470,000          |
| Upon further sales of Units in the Spring 2014 Private Placement of Units  | 14,900,000         |
| Upon further sale of shares to Autilion under the amended Securities Purchase Agreement  | 71,950,000         |
| <b>Total</b>   | <b>146,066,498</b> |

<sup>(1)</sup> Assumes exchange under the terms of the October 11, 2012 Note Exchange and Purchase Agreement with Platinum

<sup>(2)</sup> Assumes conversion under the terms of the October 11, 2012 Note Exchange and Purchase Agreement with Platinum and the terms of the individual notes

**11. Research and Development Expenses**

The Company recorded research and development expenses of approximately \$2.5 million and \$3.4 million in the fiscal years ended March 31, 2014 and 2013, respectively. Research and development expense is composed primarily of employee compensation expenses, including stock-based compensation, and direct project expenses, including costs incurred by third-party research collaborators, some of which may be reimbursed under the terms of grant or collaboration agreements.

**12. Income Taxes**

The provision for income taxes for the periods presented in the consolidated statements of operations represents minimum California franchise taxes. Income tax expense differed from the amounts computed by applying the U.S. federal income tax rate of 34% to pretax losses as a result of the following:

|  | Fiscal Years Ended March 31, |        |
|--|------------------------------|--------|
|  | 2014                         | 2013   |
| Computed expected tax benefit                  | -34.0%                       | -34.0% |
| Tax effect of Warrant Liability mark to market | 41.5%                        | -4.3%  |
| Other losses not benefitted                    | -7.5%                        | 38.2%  |
| Other  | 0.1%                         | 0.1%   |
| Income tax expense                             | 0.1%                         | 0.0%   |

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Deferred income taxes reflect the net tax effect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of the Company's deferred tax assets are as follows (in thousands):

|                                   | March 31, |           |
|-----------------------------------|-----------|-----------|
|                                   | 2014      | 2013      |
| Deferred tax assets:              |           |           |
| Net operating loss carryovers     | \$ 19,733 | \$ 19,010 |
| Basis differences in fixed assets | 37        | 9         |
| Accruals and reserves             | 17        | 8         |
| Total deferred tax assets         | 19,787    | 19,027    |
| Valuation allowance               | (19,787)  | (19,027)  |
| Net deferred tax assets           | \$ -      | \$ -      |

Realization of deferred tax assets is dependent upon future earnings, if any, the timing and amount of which are uncertain. Accordingly, the deferred tax assets have been fully offset by a valuation allowance. The valuation allowance increased by \$760,000 and \$2,814,000 during the fiscal years ended March 31, 2014 and 2013, respectively. When realized, deferred tax assets related to employee stock options will be credited to additional paid-in capital.

As of March 31, 2014, the Company had U.S. federal net operating loss carryforwards of \$50.3 million, which will expire in fiscal years 2019 through 2034. As of March 31, 2014, the Company had state net operating loss carryforwards of \$44.7 million, which will expire in fiscal years 2014 through 2034.

U.S. federal and state tax laws include substantial restrictions on the utilization of net operating loss carryforwards in the event of an ownership change of a corporation. The Company has not performed a change in ownership analysis since its inception in 1998 and accordingly some or all of its net operating loss carryforwards may not be available to offset future taxable income, if any. Even if the loss carryforwards are available they may be subject to substantial annual limitations resulting from past ownership changes, and ownership changes occurring after March 31, 2014, that could result in the expiration of the loss carryforwards before they are utilized.

The Company files income tax returns in the U.S. federal and Canadian jurisdictions and California and Maryland state jurisdictions. The Company is subject to U.S. federal and state income tax examinations by tax authorities for tax years 1999 through 2014 due to net operating losses that are being carried forward for tax purposes.

The Company does not have any uncertain tax positions or unrecognized tax benefits at March 31, 2014 and 2013. The Company's policy is to recognize interest and penalties related to income taxes as components of interest expense and other expense, respectively.

### 13. Licensing and Collaborative Agreements

#### University Health Network

On September 17, 2007, the Company and UHN entered into a Sponsored Research Collaboration Agreement ("*SRCA*") to develop certain stem cell technologies for drug discovery, development and rescue technologies. The SRCA was amended on April 19, 2010 to extend the term to five years and give the Company various options to extend the term for an additional three years. On December 15, 2010, the Company and UHN entered into a second amendment to expand the scope of work to include induced pluripotent stem cell technology and to further expand the scope of research and term extension options. On April 25, 2011, the Company and UHN amended the SRCA a third time to expand the scope to include therapeutic and stem cell therapy applications of induced pluripotent cells and to extend the date during which the Company may elect to fund additional projects to April 30, 2012. On October 24, 2011, the Company and UHN amended the SRCA a fourth time to identify five key programs that will further support the Company's core drug rescue initiatives and potential cell therapy applications. Under the terms of the fourth amendment, the Company committed to making monthly payments of \$50,000 per month from October 2011 through September 2012 to fund these programs. As disclosed in Note 9, *Convertible Notes and Other Notes Payable*, in October 2012, the Company issued a promissory note in the principal amount of \$549,500 and a warrant to UHN as payment in full for services rendered under the fourth amendment. Additionally, the Company and UHN entered into Amendment No. 5 to the SRCA establishing the sponsored research projects and the sponsored research budgets under the SRCA from October 1, 2012 to September 30, 2013, as well as a schedule of the Company's sponsored research payments for such period totaling \$309,000.

Concurrent with the execution of the fourth amendment to the SRCA, the Company and UHN entered into a License Agreement under the terms of which UHN granted the Company exclusive rights to the use of a novel molecule that can be employed in the identification and isolation of mature and immature human cardiomyocytes from pluripotent stem cells, as well as methods for the production of cardiomyocytes from pluripotent stem cells that express this marker. In consideration for the grant of the license, the Company has agreed to make payments to UHN totaling \$3.9 million, if, and when, it achieves certain commercial milestones set forth in the License Agreement, and to pay UHN royalties based on the receipt of revenue by the Company attributable to the licensed patents.

***U.S. National Institutes of Health***

During fiscal years 2006 through 2008, the U.S. National Institutes of Health ("NIH") awarded the Company a \$4.2 million grant to support preclinical development of AV-101, the Company's lead drug candidate for treatment of neuropathic pain and other neurodegenerative diseases such as Huntington's and Parkinson's diseases. In June 2009, the NIH awarded the Company a \$4.2 million grant to support the Phase I clinical development of AV-101, which amount was subsequently increased to a total of \$4.6 million in July 2010. The Company recognized NIH grant revenue related to AV-101 in the amount of \$187,000 in the quarter ended June 30, 2012. The grant expired in the ordinary course on June 30, 2012.

***Cato Research Ltd.***

The Company has built a strategic development relationship with Cato Research Ltd. ("CRL"), a global contract research and development organization, or CRO, and an affiliate of one of the Company's largest institutional stockholders. CRL has provided the Company with access to essential CRO services and regulatory expertise supporting its AV-101 preclinical and clinical development programs and other projects. The Company recorded research and development expenses for CRO services provided by CRL in the amounts of \$52,500 and \$703,800 for the fiscal years ended March 31, 2014 and 2013, respectively. As described in Note 9, *Convertible Promissory Notes and Other Notes Payable*, in October 2012, the Company issued an unsecured promissory note in the principal amount of \$1,009,000, and a warrant exercisable for 1,009,000 shares of the Company's common stock, as payment in full of all amounts owed to CRL for CRO services rendered to the Company through December 31, 2012.

**14. Stock Option Plans and 401(k) Plan**

The Company has the following share-based compensation plans.

***2008 Stock Incentive Plan***

The Company's 2008 Stock Incentive Plan (the "*2008 Plan*") was adopted by the shareholders of VistaGen California on December 19, 2008 and assumed by the Company in connection with the Merger. The maximum number of shares of the Company's common stock that may be granted pursuant to the 2008 Plan is 5,000,000 shares. The maximum number of shares that may be granted under the 2008 Plan is subject to adjustments for stock splits, stock dividends or other similar changes in the common stock or capital structure.

***1999 Stock Incentive Plan***

The Company's 1999 Stock Incentive Plan (the "*1999 Plan*") was adopted by the shareholders of VistaGen California on December 6, 1999 and assumed by the Company in connection with the Merger. The Company initially reserved 900,000 shares for the issuance of awards under the 1999 Plan. The 1999 Plan has terminated under its own terms and, as a result, no awards may currently be granted under the 1999 Plan. However, the unexpired options and awards that have already been granted pursuant to the 1999 Plan remain operative.

***Description of the 2008 Plan***

Under the terms of the 2008 Plan, the Compensation Committee of the Company's Board of Directors may grant shares, options or similar rights having either a fixed or variable price related to the fair market value of the shares and with an exercise or conversion privilege related to the passage of time, the occurrence of one or more events, or the satisfaction of performance criteria or other conditions, or any other security with the value derived from the value of the shares. Such awards include stock options, restricted stock, restricted stock units, stock appreciation rights and dividend equivalent rights.

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The Compensation Committee may grant nonstatutory stock options under the 2008 Plan at a price of not less than 100% of the fair market value of the Company's common stock on the date the option is granted. Incentive stock options under the 2008 Plan may be granted at a price of not less than 100% of the fair market value of the Company's common stock on the date the option is granted. Incentive stock options granted to employees who, on the date of grant, own stock representing more than 10% of the voting power of all of the Company's classes of stock are granted at an exercise price of not less than 110% of the fair market value of the Company's common stock. The maximum term of these incentive stock options granted to employees who own stock possessing more than 10% of the voting power of all classes of the Company's stock may not exceed five years. The maximum term of an incentive stock option granted to any other participant may not exceed ten years. The Compensation Committee determines the term and exercise or purchase price of all other awards granted under the 2008 Plan. The Compensation Committee also determines the terms and conditions of awards, including the vesting schedule and any forfeiture provisions. Awards under the 2008 Plan may vest upon the passage of time or upon the attainment of certain performance criteria established by the Compensation Committee.

Unless terminated sooner, the 2008 Plan will automatically terminate in 2017. The Board of Directors may at any time amend, suspend or terminate the Company's 2008 Plan.

During the third quarter of fiscal 2013, when the quoted market price of the Company's common stock was \$0.71 per share, the Company cancelled outstanding options to purchase an aggregate of 870,550 shares of its common stock at exercise prices between \$1.13 per share and \$2.58 per share held by certain employees, excluding the Company's Chief Executive Officer and President and Chief Scientific Officer, and by certain consultants and granted those persons new options to purchase an aggregate of 920,550 shares at an exercise price of \$0.75 per share. Such options granted during fiscal 2013 have a contractual term of 10 years with options to purchase 604,699 shares granted as immediately vested, and the remaining option shares vesting over a period of two years. The cancellation and reissuance was accounted for as a modification of the options and resulted in a charge of \$133,000. During the third quarter of fiscal 2014, when the quoted market price of the Company's common stock was \$0.40 per share, the Company reduced the exercise price of an aggregate of 3,924,245 outstanding options to purchase shares of its common stock at exercise prices between \$0.75 per share and \$2.99 per share held by certain employees, including the Company's officers and directors, and by certain consultants to \$0.40 per share or \$0.50 per share. These reductions in exercise price were accounted for as a modification of the options and resulted in a charge of \$252,000.

The following table summarizes share-based compensation expense, including share-based expense related to the March 2014 and March 2013 grants of warrants to certain of the Company's officers and to its independent directors as described in Note 10, *Capital Stock*, included in the accompanying Consolidated Statement of Operations and Comprehensive Loss for the years ended March 31, 2014 and 2013.

|   | Fiscal Years Ended  |                     |
|---|---------------------|---------------------|
|   | March 31,           |                     |
|   | 2014                | 2013                |
| Research and development expense:                               |                     |                     |
| Stock option grants, including expense related to modifications | \$ 296,900          | \$ 242,300          |
| Warrants granted to officer in March 2014                       | 22,800              | -                   |
| Warrants granted to officer in March 2013                       | 133,700             | 267,500             |
|   | <u>453,400</u>      | <u>509,800</u>      |
| General and administrative expense:                             |                     |                     |
| Stock option grants, including expense related to modifications | 385,100             | 196,600             |
| Warrants granted to officer and directors in March 2014         | 31,300              | -                   |
| Warrants granted to officers and directors in March 2013        | 267,500             | 534,900             |
|   | <u>683,900</u>      | <u>731,500</u>      |
| Total stock-based compensation expense                          | <u>\$ 1,137,300</u> | <u>\$ 1,241,300</u> |

The Company used the Black-Scholes option valuation model with the following assumptions to determine share-based compensation expense related to option grants during the fiscal years ended March 31, 2014 and 2013:

|                                    | Fiscal Years Ended March 31, |                   |
|------------------------------------|------------------------------|-------------------|
|                                    | 2014                         | 2013              |
| Exercise price                     | \$0.40 to \$0.82             | \$0.51 and \$0.75 |
| Market price on date of grant      | \$0.40 to \$0.82             | \$0.51 and \$0.71 |
| Risk-free interest rate            | 1.08% to 2.53%               | 0.90% to 1.74%    |
| Expected term (years)              | 6.25 to 10.0                 | 6.25 to 10.0      |
| Volatility                         | 87.9% to 103.2%              | 82.9% to 85.4%    |
| Expected dividend yield            | 0%                           | 0%                |
| Fair value per share at grant date | \$0.32 to \$0.68             | \$0.36 to \$0.59  |

The expected term of options represents the period that the Company's share-based compensation awards are expected to be outstanding. The Company has calculated the weighted-average expected term of the options using the simplified method as prescribed by Securities and Exchange Commission Staff Accounting Bulletins No. 107 and No. 110 ("SAB No. 107 and 110"). The utilization of SAB No. 107 and 110 was based on the lack of relevant historical data due to the Company's limited historical experience as a publicly traded company as well as the lack of liquidity resulting from the limited number of freely-tradable shares of its common stock. Limited historical experience and lack of liquidity in its stock also resulted in the Company's decision to utilize the historical volatilities of a peer group of public companies' stock over the expected term of the option in determining its expected volatility assumptions. The risk-free interest rate for periods related to the expected life of the options is based on the U.S. Treasury yield curve in effect at the time of grant. The expected dividend yield is zero, as the Company has not paid any dividends and does not anticipate paying dividends in the near future. The Company calculated the forfeiture rate based on an analysis of historical data, as it reasonably approximates the currently anticipated rate of forfeitures for granted and outstanding options that have not vested.

The following table summarizes activity for the fiscal years ended March 31, 2014 and 2013 under the Company's stock option plans:

|   | Fiscal Years Ended March 31, |                                 |                  |                                 |
|---|------------------------------|---------------------------------|------------------|---------------------------------|
|   | 2014                         |                                 | 2013             |                                 |
|   | Number of Shares             | Weighted Average Exercise Price | Number of Shares | Weighted Average Exercise Price |
| Options outstanding at beginning of period                                  | 4,912,604                    | \$ 1.32                         | 4,805,771        | \$ 1.53                         |
| Options granted   | 381,000                      | \$ 0.54                         | 1,075,550        | \$ 0.72                         |
| Options exercised   | -                            | \$ -                            | -                | \$ -                            |
| Options cancelled   | -                            | \$ -                            | (870,550)        | \$ 1.72                         |
| Options forfeited   | (79,080)                     | \$ 1.75                         | (29,167)         | \$ 1.75                         |
| Options expired   | (965,253)                    | \$ 1.20                         | (69,000)         | \$ 1.34                         |
| Options outstanding at end of period  | 4,249,271                    | \$ 0.50                         | 4,912,604        | \$ 1.32                         |
| Options exercisable at end of period  | 3,655,061                    | \$ 0.50                         | 4,227,436        | \$ 1.35                         |
| Weighted average grant-date fair value of options granted during the period |                              | \$ 0.42                         |                  | \$ 0.52                         |

The following table summarizes information on stock options outstanding and exercisable under the Company's option plans as of March 31, 2014:

| Exercise Price    | Options Outstanding |   |                                 | Options Exercisable |                                 |  |
|-------------------|---------------------|---|---------------------------------|---------------------|---------------------------------|--|
|                   | Number Outstanding  | Weighted Average Remaining Years until Expiration | Weighted Average Exercise Price | Number Exercisable  | Weighted Average Exercise Price |  |
| \$ 0.40           | 1,041,550           | 8.53  | \$ 0.40                         | 810,560             | \$ 0.40                         |  |
| \$ 0.50           | 2,988,695           | 5.90  | \$ 0.50                         | 2,657,665           | \$ 0.50                         |  |
| \$ 0.72 - \$ 1.80 | 219,026             | 5.46  | \$ 1.06                         | 186,836             | \$ 1.00                         |  |
|                   | <u>4,249,271</u>    | 6.52  | \$ 0.50                         | <u>3,655,061</u>    | \$ 0.50                         |  |

At March 31, 2014, there were 735,200 shares of the Company's common stock remaining available for grant under the 2008 Plan. There were no option exercises during the year ended March 31, 2014.

Aggregate intrinsic value is the sum of the amounts by which the fair value of the stock exceeded the exercise price ("*in-the-money-options*"). Based on the quoted market price of the Company's common stock of \$0.46 per share on March 31, 2014, the aggregate intrinsic value of outstanding options at that date was \$62,500, of which \$48,600 related to exercisable options.

As of March 31, 2014, there was approximately \$394,300 of unrecognized compensation cost related to non-vested share-based compensation awards from the 2008 Plan, which is expected to be recognized through May 2016. Additionally, at March 31, 2014 there was approximately \$455,300 of unrecognized compensation cost related to unvested warrant grants to independent directors and officers, which is expected to be recognized through March 2016 absent any conditions which would accelerate the vesting of the awards and corresponding expense recognition.

**401(k) Plan**

The Company, through a third-party agent, maintains a retirement and deferred savings plan for its employees. This plan is intended to qualify as a tax-qualified plan under Section 401(k) of the Internal Revenue Code. The retirement and deferred savings plan provides that each participant may contribute a portion of his or her pre-tax compensation, subject to statutory limits. Under the plan, each employee is fully vested in his or her deferred salary contributions. Employee contributions are held and invested by the plan's trustee. The retirement and deferred savings plan also permits the Company to make discretionary contributions, subject to established limits and a vesting schedule. To date, the Company has not made any discretionary contributions to the retirement and deferred savings plan on behalf of participating employees.

**15. Related Party Transactions**

Cato Holding Company ("*CHC*"), doing business as Cato BioVentures ("*CBV*"), the parent of CRL, is one of the Company's largest institutional stockholders at March 31, 2014, holding common stock and warrants to purchase common stock. Prior to the May 11, 2011 conversion of certain of VistaGen California's outstanding promissory notes and the exchange of its preferred stock into shares of common stock in connection with the Merger, CBV held various promissory notes and a majority of VistaGen California's Series B-1 Preferred Stock. Shawn Singh, the Company's Chief Executive Officer and member of its Board of Directors, served as Managing Principal of CBV and as an officer of CRL until August 2009. As described in Note 9, *Convertible Promissory Notes and Other Notes Payable*, in April 2011, CBV loaned the Company \$352,300 under the terms of the 2011 CHC Note. On October 10, 2012, the Company and CHC cancelled the 2011 CHC Note and exchanged it for a new unsecured promissory note in the principal amount of \$310,443 (the "*2012 CHC Note*") and a five-year warrant to purchase 250,000 restricted shares of the Company's common stock at a price of \$1.50 per share (the "*CHC Warrant*"). Additionally, on October 10, 2012, the Company issued to CRL: (i) an unsecured promissory note in the initial principal amount of \$1,009,000, which is payable solely in restricted shares of the Company's common stock and which accrues interest at the rate of 7.5% per annum, compounded monthly (the "*CRL Note*"), as payment in full for all contract research and development services and regulatory advice rendered by CRL to the Company and its affiliates through December 31, 2012 with respect to the preclinical and clinical development of AV-101, and (ii) a five-year warrant to purchase, at a price of \$1.00 per share, 1,009,000 restricted shares of the Company's common stock.

During fiscal year 2007, the Company entered into a contract research organization arrangement with CRL related to the development of AV-101, under which the Company incurred expenses of \$52,500 and \$703,800 for the fiscal years ended March 31, 2014 and 2013, respectively, with a portion of the fiscal 2013 expenses reimbursed under the NIH grant. Total interest expense on notes payable to CHC and CRL was \$167,900 and \$101,700 for the fiscal years ended March 31, 2014 and 2013, respectively.

Upon the approval of the Board of Directors, in December 2006, VistaGen California accepted a full-recourse promissory note in the amount of \$103,400 from Mr. Singh in payment of the exercise price for options and warrants to purchase an aggregate of 126,389 restricted shares of VistaGen California's common stock. The note accrued interest at a rate of 4.90% per annum and was due and payable no later than the earlier of (i) December 1, 2016 or (ii) ten days prior to the Company becoming subject to the requirements of the Securities Exchange Act of 1934, as amended ("Exchange Act"). On May 11, 2011, in connection with the Merger, the \$128,200 outstanding balance of principal and accrued interest on this note was cancelled in accordance with Mr. Singh's employment agreement and recorded as additional compensation. In accordance with his employment agreement, Mr. Singh is also entitled to receive an income tax gross-up on the compensation related to the note cancellation. At March 31, 2014 and 2013, the Company had accrued \$101,900 as an estimate of the gross-up amount, but the Company had not yet paid that amount to Mr. Singh.

#### 16. Commitments, Contingencies, Guarantees and Indemnifications

From time to time, the Company may become involved in claims and other legal matters arising in the ordinary course of business. Management is not currently aware of any claims made or other legal matters that will have a material adverse effect on the Company's consolidated financial position, results of operations or its cash flows.

The Company indemnifies its officers and directors for certain events or occurrences while the officer or director is or was serving at the Company's request in such capacity. The term of the indemnification period is for the officer's or director's lifetime. The Company will indemnify the officers or directors against any and all expenses incurred by the officers or directors because of their status as one of the Company's directors or executive officers to the fullest extent permitted by California law. The Company has never incurred costs to defend lawsuits or settle claims related to these indemnification agreements. The Company has a director and officer insurance policy which limits the Company's exposure and may enable it to recover a portion of any future amounts paid. The Company believes the fair value of these indemnification agreements is minimal. Accordingly, there are no liabilities recorded for these agreements at March 31, 2014 or 2013.

In the normal course of business, the Company provides indemnifications of varying scopes under agreements with other companies, typically clinical research organizations, investigators, clinical sites, suppliers and others. Pursuant to these agreements, the Company generally indemnifies, holds harmless, and agrees to reimburse the indemnified parties for losses suffered or incurred by the indemnified parties in connection with the use or testing of the Company's product candidates or with any U.S. patents or any copyright or other intellectual property infringement claims by any third party with respect to the Company's product candidates. The terms of these indemnification agreements are generally perpetual. The potential future payments the Company could be required to make under these indemnification agreements is unlimited. The Company maintains liability insurance coverage that limits its exposure. The Company believes the fair value of these indemnification agreements is minimal. Accordingly, the Company has not recorded any liabilities for these agreements as of March 31, 2014 or 2013.

#### Leases

As of March 31, 2014 and 2013, the following assets are under capital lease obligations and included in property and equipment:

|                          | March 31, |           |
|--------------------------|-----------|-----------|
|                          | 2014      | 2013      |
| Laboratory equipment     | \$ 19,000 | \$ 19,000 |
| Office equipment         | 4,500     | 4,500     |
|                          | 23,500    | 23,500    |
| Accumulated depreciation | (11,100)  | (6,400)   |
| Net book value           | \$ 12,400 | \$ 17,100 |

Amortization expense for assets recorded under capital leases is included in depreciation expense. Future minimum payments, by year and in the aggregate, required under capital leases are as follows:

| Fiscal Years Ending March 31,                            | Equipment<br>Capital<br>Leases |
|--|--------------------------------|
| 2015   | \$ 4,300                       |
| 2016   | 1,200                          |
| 2017   | 1,200                          |
| 2018   | 100                            |
| Future minimum lease payments                            | <u>6,800</u>                   |
| Less imputed interest included in minimum lease payments | <u>(800)</u>                   |
| Present value of minimum lease payments                  | 6,000                          |
| Less current portion                                     | <u>(3,900)</u>                 |
| Non-current capital lease obligation                     | <u>\$ 2,100</u>                |

At March 31, 2014, future minimum payments under operating leases relate to the Company's facility lease in South San Francisco, California through July 31, 2017 and are as follows:

| Fiscal Years Ending March 31, | Amount            |
|-------------------------------|-------------------|
| 2015                          | \$ 250,900        |
| 2016                          | 264,000           |
| 2017                          | 277,100           |
| 2018                          | 93,800            |
|                               | <u>\$ 885,800</u> |

Total facility rent expense incurred by the Company for the fiscal years ended March 31, 2014 and 2013 was \$284,100 and \$179,000, respectively.

**Long-Term Debt Repayment**

At March 31, 2014, assuming that all outstanding convertible notes are converted into shares of common stock in accordance with their respective conversion provisions and that Replacement Note B issued to Morrison & Foerster, the CRL Note and the UHN Note, each as described further in Note 9, *Convertible Promissory Notes and Other Notes Payable*, are repaid through the issuance of restricted common stock upon the exercise of the warrants associated with such notes, future minimum principal payments related to long-term debt were as follows:

| Fiscal Years Ending March 31, | Amount              |
|-------------------------------|---------------------|
| 2015                          | \$ 1,562,500        |
| 2016                          | 461,300             |
| 2017                          | 10,000              |
| 2018                          | 10,700              |
| Thereafter through June 2019  | 13,000              |
|                               | <u>\$ 2,057,500</u> |

**17. Subsequent Events**

The Company has evaluated subsequent events through the date of this report and has identified the following material events and transactions that occurred after March 31, 2014.



#### **2014 Unit Private Placement**

From April 1, 2014 through June 19, 2014, the Company entered into securities purchase agreements with accredited investors, including Platinum, pursuant to which it sold to such accredited investors Units, for aggregate cash proceeds of \$1,465,000, consisting of (i) 10% convertible 2014 Unit Notes in the aggregate face amount of \$1,465,000 due on March 31, 2015 or automatically convertible into securities the Company may issue upon the consummation of a Qualified Financing, as defined in the 2014 Unit Note, prior to March 31, 2015; (ii) an aggregate of 1,465,000 restricted shares of the Company's common stock; and (iii) 2014 Unit Warrants exercisable through December 31, 2016 to purchase an aggregate of 1,465,000 restricted shares of the Company's common stock at an exercise price of \$0.50 per share.

#### **Satisfaction of Technology License and Maintenance Fees and Patent Expenses**

In April 2014, the Company issued (i) a promissory note in the face amount of \$300,000 due on the earlier of December 31, 2014, or the completion of a qualified financing, as defined, (ii) 300,000 restricted shares of its common stock and (iii) a warrant exercisable through March 31, 2019 to purchase 300,000 restricted shares of its common stock at an exercise price of \$0.50 per share to Icahn School of Medicine at Mount Sinai in satisfaction of \$288,400 of stem cell technology license maintenance fees and reimbursable patent prosecution costs.

#### **Amendment of Notes and Warrants issued in 2013/2014 Unit Private Placement**

Effective May 31, 2014, the Company entered into note and warrant amendment agreements with certain holders of 2013/2014 Unit Notes and 2013/2014 Unit Warrants to (i) modify certain terms of the 2013/2014 Unit Notes, including the maturity date and the conversion features, to conform to the corresponding terms of the 2014 Unit Notes and (ii) to modify certain terms of the 2013/2014 Unit Warrants, including the exercise price and expiration date, to conform to the corresponding terms of the 2014 Unit Warrants. Holders of 2013/2014 Unit Notes having an aggregate initial face amount of \$845,000 agreed to the amendments. The maturity date of the \$75,000 of initial face amount of 2013/2014 Unit Notes payable to holders who did not agree to amend their 2013/2014 Unit Note and 2013/2014 Unit Warrant remains July 30, 2014 and the exercise price and expiration date of the 2013/2014 Unit Warrants held by such holders remains unchanged. Since March 31, 2014 and through the date of this report, the Company has repaid 2013/2014 Unit Notes having an initial face value of \$65,200.

#### **Extension of McCarthy Note Maturity Date**

On June 11, 2014, the Company and McCarthy agreed to extend the maturity date of the Company's promissory note payable to McCarthy from June 14, 2014 to the earlier of (i) September 30, 2014, (ii) consummation of a financing in which the Company receives gross cash proceeds of at least \$15.0 million, or (iii) consummation of a change of control of the Company, as defined in the McCarthy note. McCarthy also agreed to forbear with respect to the requirement that the Company make monthly payments on the note from the date of the agreement until maturity and granted the Company a waiver with respect to previously missed monthly payments.

#### **18. Supplemental Financial Information**

##### **Quarterly Results of Operations (Unaudited)**

The following table presents the unaudited statements of operations data for each of the eight quarters in the period ended March 31, 2014. The information has been presented on the same basis as the audited financial statements and all necessary adjustments, consisting only of normal recurring adjustments, have been included in the amounts below to present fairly the unaudited quarterly results when read in conjunction with the audited financial statements and related notes. The operating results for any quarter should not be relied upon as necessarily indicative of results for any future period.

**Unaudited Quarterly Results of Operations**  
(in thousands, except share and per share amounts)

|   | Three Months Ended |                    |                   |                | Total<br>Fiscal Year 2014 |
|---|--------------------|--------------------|-------------------|----------------|---------------------------|
|   | June 30, 2013      | September 30, 2013 | December 31, 2013 | March 31, 2014 |                           |
| <b>Revenues:</b>                                  |                    |                    |                   |                |                           |
| Grant revenue                                     | \$ -               | \$ -               | \$ -              | \$ -           | \$ -                      |
| Total revenues                                    | -                  | -                  | -                 | -              | -                         |
| <b>Operating expenses:</b>                        |                    |                    |                   |                |                           |
| Research and development                          | 695                | 669                | 551               | 566            | 2,481                     |
| General and administrative                        | 605                | 546                | 897               | 500            | 2,548                     |
| Total operating expenses                          | 1,300              | 1,215              | 1,448             | 1,066          | 5,029                     |
| Loss from operations                              | (1,300)            | (1,215)            | (1,448)           | (1,066)        | (5,029)                   |
| <b>Other expenses, net:</b>                       |                    |                    |                   |                |                           |
| Interest expense, net                             | (316)              | (323)              | (361)             | (503)          | (1,503)                   |
| Change in warrant liabilities                     | 1,805              | 79                 | 1,940             | (257)          | 3,567                     |
| Income (loss) before income taxes                 | 189                | (1,459)            | 131               | (1,826)        | (2,965)                   |
| Income taxes                                      | (3)                | -                  | -                 | -              | (3)                       |
| Net income (loss)                                 | \$ 186             | \$ (1,459)         | \$ 131            | \$ (1,826)     | \$ (2,968)                |
| <b>Basic net income (loss) per common share</b>   |                    |                    |                   |                |                           |
|   | \$ 0.01            | \$ (0.07)          | \$ 0.01           | \$ (0.08)      | \$ (0.14)                 |
| <b>Diluted net loss per common share</b>          |                    |                    |                   |                |                           |
|   | \$ (0.02)          | \$ (0.07)          | \$ (0.02)         | \$ (0.08)      | \$ (0.19)                 |
| <b>Weighted average shares used in computing:</b> |                    |                    |                   |                |                           |
| Basic net income (loss) per common share          | 20,839,941         | 21,630,587         | 22,210,573        | 23,251,044     | 21,973,149                |
| Diluted net loss per common share                 | 21,229,190         | 21,630,587         | 22,210,573        | 23,251,044     | 21,973,149                |

|   | Three Months Ended |                    |                    |                   | Total<br>Fiscal Year 2013 |
|---|--------------------|--------------------|--------------------|-------------------|---------------------------|
|   | June 30, 2012      | September 30, 2012 | December 31, 2012  | March 31, 2013    |                           |
| Revenues:   |                    |                    |                    |                   |                           |
| Grant revenue   | \$ 200             | \$ -               | \$ -               | \$ -              | \$ 200                    |
| Total revenues  | <u>200</u>         | <u>-</u>           | <u>-</u>           | <u>-</u>          | <u>200</u>                |
| Operating expenses:   |                    |                    |                    |                   |                           |
| Research and development  | 866                | 1,106              | 1,120              | 339               | 3,431                     |
| General and administrative  | 1,055              | 576                | 799                | 1,132             | 3,562                     |
| Total operating expenses  | <u>1,921</u>       | <u>1,682</u>       | <u>1,919</u>       | <u>1,471</u>      | <u>6,993</u>              |
| Loss from operations  | (1,721)            | (1,682)            | (1,919)            | (1,471)           | (6,793)                   |
| Other expenses, net:  |                    |                    |                    |                   |                           |
| Interest expense, net   | (103)              | (274)              | (235)              | (309)             | (921)                     |
| Change in warrant liabilities   | -                  | -                  | 358                | (1,994)           | (1,636)                   |
| Loss on early extinguishment of debt  | -                  | -                  | (3,537)            | (31)              | (3,568)                   |
| Other income  | -                  | -                  | -                  | 35                | 35                        |
| Loss before income taxes  | (1,824)            | (1,956)            | (5,333)            | (3,770)           | (12,883)                  |
| Income taxes  | (2)                | -                  | (2)                | -                 | (4)                       |
| Net loss  | (1,826)            | \$ (1,956)         | \$ (5,335)         | \$ (3,770)        | \$ (12,887)               |
| Deemed dividend on Series A Preferred Stock   | -                  | -                  | (10,193)           | -                 | (10,193)                  |
| Net income (loss) attributable to common stockholders   | <u>\$ (1,826)</u>  | <u>\$ (1,956)</u>  | <u>\$ (15,528)</u> | <u>\$ (3,770)</u> | <u>\$ (23,080)</u>        |
| Basic and diluted net loss attributable to common stockholders per common share   | <u>\$ (0.11)</u>   | <u>\$ (0.11)</u>   | <u>\$ (0.85)</u>   | <u>\$ (0.19)</u>  | <u>\$ (1.27)</u>          |
| Weighted average shares used in computing basic and diluted net loss attributable to common stockholders per common share | <u>16,842,655</u>  | <u>17,094,833</u>  | <u>18,292,301</u>  | <u>20,236,491</u> | <u>18,108,444</u>         |

**Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure**

None.

**Item 9A. Controls and Procedures**

**Evaluation of Disclosure Controls and Procedures**

Based on their evaluation as of the end of the period covered by this report, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) were effective as of the end of the period covered by this report to ensure that information that we are required to disclose in reports that management files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms.

Our disclosure controls and procedures are designed to provide reasonable assurance of achieving their objectives, and our chief executive officer and acting chief financial officer have concluded that these controls and procedures are effective at the “reasonable assurance” level. We believe that a control system, no matter how well designed and operated, cannot provide absolute assurance that the objectives of the control system are met, and no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within a company have been detected.

**Management’s Annual Report on Internal Control Over Financial Reporting**

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. GAAP.

There are inherent limitations in the effectiveness of any system of internal control, including the possibility of human error and the circumvention or overriding of controls. Accordingly, even effective internal controls can provide only reasonable assurances with respect to financial statement preparation. Further, because of changes in conditions, the effectiveness of internal control may vary over time.

Our management assessed the effectiveness of our internal control over financial reporting as of March 31, 2014. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations (COSO) of the Treadway Commission in *Internal Control—Integrated Framework (1992)*. Based on its assessment using the COSO criteria, management concluded that our internal control over financial reporting was effective as of March 31, 2014.

As a result of the enactment of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, and the resulting amendment of Section 404 of the Sarbanes-Oxley Act of 2002, as a non-accelerated filer, we are not required to provide an attestation report by our independent registered public accounting firm regarding internal control over financial reporting for the fiscal year ended March 31, 2014 or thereafter, until such time as we are no longer eligible for the exemption for smaller issuers set forth within the Sarbanes-Oxley Act.

**Changes in Internal Control Over Financial Reporting**

There were no changes in our internal control over financial reporting that occurred during our most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

**Item 9B. Other Information**

None.

## PART III

## Item 10. Directors Officers and Corporate Governance.

Our senior management is composed of individuals with significant management experience. Our directors and executive officers as of June 19, 2014 are as follows:

| Name                         | Age | Position  |
|------------------------------|-----|---|
| Shawn K. Singh, J.D.         | 51  | Chief Executive Officer and Director                      |
| H. Ralph Snodgrass, Ph.D.    | 64  | Founder, President, Chief Scientific Officer and Director |
| Jerrold D. Dotson            | 60  | Vice President, Chief Financial Officer and Secretary     |
| Jon S. Saxe (1)              | 77  | Director  |
| Brian J. Underdown, PhD. (2) | 73  | Director  |

(1) Chairman of the audit committee and member of the compensation committee and corporate governance and nominating committee

(2) Member of the audit committee and chairman of the compensation committee and corporate governance and nominating committee

**Executive officers**

**Shawn K. Singh, J.D.** has served as our Chief Executive Officer since August 2009; he joined our Board of Directors in 2000 and served on our management team (part-time) from late-2003, following our acquisition of Artemis Neuroscience, of which he was President, to August 2009. Mr. Singh has over 20 years of experience working with biotechnology, medical device and pharmaceutical companies, both private and public. From February 2001 to August 2009, Mr. Singh served as Managing Principal of Cato BioVentures, a life science venture capital firm, and as Chief Business Officer and General Counsel of Cato Research, a profitable global contract research organization (CRO) affiliated with Cato BioVentures. Mr. Singh served as President (part-time) of Echo Therapeutics (NASDAQ: ECTE), a medical device company, from September 2007 to June 2009, and as a member of its Board of Directors from September 2007 through December 2011. He also served as Chief Executive Officer (part-time) of Hemodynamic Therapeutics, a private biopharmaceutical company affiliated with Cato BioVentures, from November 2004 to August 2009. From late-2000 to February 2001, Mr. Singh served as Managing Director of Start-Up Law, a management consulting firm serving biotechnology companies. Mr. Singh also served as Chief Business Officer of SciClone Pharmaceuticals (NASDAQ: SCLN), a US-based, China-focused specialty pharmaceutical company with a substantial revenue-generating and profitable commercial business and a marketed product portfolio of differentiated therapies for oncology, infectious diseases and cardiovascular disorders, from late-1993 to late-2000, and as a corporate finance associate of Morrison & Foerster LLP, an international law firm, from 1991 to late-1993. Mr. Singh currently serves as a member of the Board of Directors of Armour Therapeutics, a private biotechnology company focused on prostate cancer. Mr. Singh earned a B.A. degree, with honors, from the University of California, Berkeley, and a J.D. degree from the University of Maryland School of Law. Mr. Singh is a member of the State Bar of California.

We selected Mr. Singh to serve on our Board of Directors due to his substantial practical experience and expertise in senior leadership roles with multiple private and public biotechnology, pharmaceutical and medical device companies, and his extensive experience in corporate finance, venture capital, corporate governance and strategic partnering.

**H. Ralph Snodgrass, Ph.D.** co-founded VistaGen with Dr. Gordon Keller in 1998 and served as our Chief Executive Officer until August 2009. Dr. Snodgrass has served as our President and Chief Scientific Officer since August 2009. He has served as a member of our Board of Directors since 1998. Prior to founding VistaGen, Dr. Snodgrass served as a key member of the executive management team which lead Progenitor, Inc., a biotechnology company focused on developmental biology, through its initial public offering, and was its Chief Scientific Officer from June 1994 to May 1998, and its Executive Director from July 1993 to May 1994. He received his Ph.D. in immunology from the University of Pennsylvania, and has 20 years of experience in senior biotechnology management and over 10 years research experience as a professor at the Lineberger Comprehensive Cancer Center, University of North Carolina Chapel Hill School of Medicine, and as a member of the Institute for Immunology, Basel, Switzerland. Dr. Snodgrass is a past Board Member of the Emerging Company Section of the Biotechnology Industry Organization (BIO), and past member of the International Society Stem Cell Research Industry Committee. Dr. Snodgrass has published more than 50 scientific papers, is the inventor on more than 17 patents and a number of patent applications, is, or has been, the principal investigator on U.S. federal and private foundation sponsored research grants with budgets totaling more than \$14.5 million and is recognized as an expert in stem cell biology with more than 20 years' experience in the uses of stem cells as biological tools for drug discovery and development.

We selected Dr. Snodgrass to serve on our board of directors due to his expertise in biotechnology focused on developmental biology, including stem cell biology, his extensive senior management experience leading biotechnology companies at all stages of development, as well as his reputation and standing in the fields of biotechnology and stem cell research, allow him to bring to us and the Board of Directors a unique understanding of the challenges and opportunities associated with pluripotent stem cell biology, as well as credibility in the markets in which we operate.

**Jerrold D. Dotson, CPA** has served as our Chief Financial Officer since September 2011, as our Corporate Secretary since October 2013 and as a Vice President since February 2014. Mr. Dotson served as Corporate Controller for Discovery Foods Company, a privately held Asian frozen foods company from January 2009 to September 2011. From February 2007 through September 2008, Mr. Dotson served as Vice President, Finance and Administration (principal financial and accounting officer) for Calypte Biomedical Corporation (OTCBB: CBMC), a publicly held biotechnology company. Mr. Dotson served as Calypte's Corporate Secretary from 2001 through September 2008. He also served as Calypte's Director of Finance from January 2000 through July 2005 and was a financial consultant to Calypte from August 2005 through January 2007. Prior to joining Calypte, from 1988 through 1999, Mr. Dotson worked in various financial management positions, including Chief Financial Officer, for California & Hawaiian Sugar Company, a privately held company. Mr. Dotson is licensed as a CPA in California and received his BS degree in Business Administration with a concentration in accounting from Abilene Christian College.

#### **Directors**

**Jon S. Saxe, J.D.** has served as Chairman of our Board of Directors since 2000. He also serves as the Chairman of our Audit Committee. Mr. Saxe is the retired President and was a director of PDL BioPharma. From 1989 to 1993, he was President, Chief Executive Officer and a director of Synergen, Inc. (acquired by Amgen). Mr. Saxe served as Vice President, Licensing & Corporate Development for Hoffmann-Roche from 1984 through 1989, and Head of Patent Law for Hoffmann-Roche from 1978 through 1989. Mr. Saxe currently is a director of SciClone Pharmaceuticals, Inc. (Nasdaq: SCLN) and Durect Corporation (Nasdaq: DRRX), and two private biotechnology companies, Arbor Vita Corporation and Arcuo Medical, LLC. Mr. Saxe also has served as a director of other biotechnology and pharmaceutical companies, including ID Biomedical (acquired by GlaxoSmithKline), Sciele Pharmaceuticals, Inc. (acquired by Shionogi), Amalyte (acquired by Kemin Industries), Cell Pathways (acquired by OSI Pharmaceuticals), and other companies, both public and private. Mr. Saxe has a B.S.Ch.E. from Carnegie-Mellon University, a J.D. degree from George Washington University and an LL.M. degree from New York University.

We selected Mr. Saxe to serve as Chairman of our Board of Directors due to numerous years of experience as a senior executive with major biopharmaceutical and biotechnology companies, including Protein Design Labs, Inc., Synergen, Inc. and Hoffmann-Roche, Inc., as well as his extensive experience serving as a director of numerous private and public biotechnology and pharmaceutical companies, serving as Chairman, and Chair and member of audit, compensation and governance committees of both private and public companies. Mr. Saxe provides us and our Board of Directors with highly valuable insight and perspective into the biotechnology and pharmaceutical industries, as well as the strategic opportunities and challenges that we face.

**Brian J. Underdown, Ph.D.** has served as a member of our Board of Directors since November 2009. Dr. Underdown has served as Managing Director of Lumira Capital Corp. since September 1997, having started in the venture capital industry in 1997 with MDS Capital Corporation (MDSCC). His investment focus has been on therapeutics in both new and established companies in both Canada and the United States. Prior to joining MDSCC, Dr. Underdown held a number of senior management positions in the biopharmaceutical industry and at universities. Dr. Underdown's past and current board positions include: ID Biomedical, Trillium Therapeutics, Cytochroma Inc., Argos Therapeutics, Nysa Membrane Technologies, Ception Therapeutics and Transmolecular Therapeutics. He has served on a number of Boards and advisory bodies of government sponsored research organizations including CANVAC, the Canadian National Centre of Excellence in Vaccines, Ontario Genomics Institute, Allergen, the Canadian National Centre of Excellence in Allergy and Asthma. Dr. Underdown obtained his Ph.D. in immunology from McGill University and undertook post-doctoral studies at Washington University School of Medicine.

We selected Dr. Underdown to serve on our Board of Directors due to his extensive background working in the biotechnology and pharmaceutical industries, as a director of numerous private and public companies, as well as his venture capital experience funding and advising start-up and established companies focused on therapeutics.

#### **Election of Executive Officers**

Our executive officers are elected by, and serve at the discretion of, our board of directors. Each of our executive officers devotes his full time to our affairs. There are no family relationships among any of our directors or executive officers.

#### **Board Composition**

Our amended and restated bylaws provide that the authorized number of directors of the Company shall be not less than one nor more than seven, with the exact number of directors currently fixed at seven. The exact number may be amended only by the vote or written consent of a majority of the outstanding shares of our voting stock. Our board of directors currently consists of four members. Accordingly, there are currently three vacancies on our board of directors. Our board of directors anticipates filling each of such vacancies as soon as practicable. All actions of the board of directors require the approval of a majority of the directors in attendance at a meeting at which a quorum is present.

#### **Board Committees**

Our board of directors has established an audit committee, a compensation committee and a corporate governance and nominating committee. The composition and responsibilities of each committee are described below. Members serve on these committees until their resignation or until otherwise determined by our board of directors. Our independent directors, Mr. Saxe and Dr. Underdown, are each members of the audit committee. Mr. Saxe and Dr. Underdown also currently serve as members of the compensation committee and the corporate governance and nominating committee.

#### *Audit Committee*

Our audit committee is comprised of Mr. Saxe and Dr. Underdown. Mr. Saxe is the chairman of our audit committee and is our audit committee financial expert, as that term is defined under SEC rules implementing Section 407 of the Sarbanes Oxley Act of 2002, and possesses the requisite financial sophistication, as defined under applicable rules. The audit committee operates under a written charter. Our audit committee charter is available on our website. Under its charter, our audit committee is primarily responsible for, among other things,

- overseeing our accounting and financial reporting process;
- selecting, retaining and replacing our independent auditors and evaluating their qualifications, independence and performance;
- reviewing and approving scope of the annual audit and audit fees;
- monitoring rotation of partners of independent auditors on engagement team as required by law;

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- discussing with management and independent auditors the results of annual audit and review of quarterly financial statements;
- reviewing adequacy and effectiveness of internal control policies and procedures;
- approving retention of independent auditors to perform any proposed permissible non-audit services;
- overseeing internal audit functions and annually reviewing audit committee charter and committee performance; and
- preparing the audit committee report that the SEC requires in our annual proxy statement.

*Compensation Committee*

Our compensation committee is comprised of Mr. Saxe and Dr. Underdown, who serves as the committee chairman. Our compensation committee charter is available on our website. Under its charter, the compensation committee is primarily responsible for, among other things,

- Reviewing and approving our compensation programs and arrangements applicable to our executive officers (as defined in Rule 16a-1 (f) of the Exchange Act), including all employment-related agreements or arrangements under which compensatory benefits are awarded or paid to, or earned or received by, our executive officers, including, without limitation, employment, severance, change of control and similar agreements or arrangements;
- Determining the objectives of our executive officer compensation programs;
- Ensuring corporate performance measures and goals regarding executive officer compensation are set and determining the extent to which they are achieved and any related compensation earned;
- Establishing goals and objectives relevant to CEO compensation, evaluating CEO performance in light of such goals and objectives, and determining CEO compensation based on the evaluation; and
- Endeavoring to ensure that our executive compensation programs are effective in attracting and retaining key employees and reinforcing business strategies and objectives for enhancing stockholder value; monitoring the administration of incentive-compensation plans and equity-based incentive plans as in effect and as adopted from time to time by the board.
- Reviewing and approving any new equity compensation plan or any material change to an existing plan.
- Reviewing and approving any stock option award or any other type of award as may be required for complying with any tax, securities, or other regulatory requirement, or otherwise determined to be appropriate or desirable by the committee or board.

*Corporate Governance and Nominating Committee*

Our corporate governance and nominating committee is comprised of Mr. Saxe and Dr. Underdown, who serves as the committee chairman. Our corporate governance and nominating committee charter is available on our website. Under its charter, the corporate governance and nominating committee is primarily responsible for, among other things:

- Monitoring the size and composition of the board;
- Making recommendations to the board with respect to the nominations or elections of our directors;
- Reviewing the adequacy of our corporate governance policies and procedures and our Code of Business Conduct and Ethics, and recommending any proposed changes to the board for approval; and
- Considering any requests for waivers from our Code of Business Conduct and Ethics and ensure that we disclose such waivers as may be required by the exchange on which we are listed, if any, and rules and regulations of the SEC.



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All potential candidates for director nominees, including candidates recommended by our stockholders, are reviewed in the context of the current composition of the Board, our operating requirements and the long-term interests of our stockholders. In conducting this assessment, the Committee considers such factors as it deems appropriate given our current needs and those of our Board, to maintain a balance of expertise, experience and capability. The Corporate Governance and Nominating Committee reviews directors' overall service during their term, including the number of meetings attended, their level of participation and quality of performance. The Committee also determines whether the nominee would be independent, which determination is based upon applicable Nasdaq or other exchange listing standards, applicable SEC rules and regulations and the advice of counsel, if necessary.

The Corporate Governance and Nominating Committee will consider director candidates recommended by stockholders in the same manner as it considers recommendations from current directors or other sources. Stockholders who wish to recommend individuals for consideration by the Corporate Governance and Nominating Committee to become nominees for election to the Board may do so by delivering a written recommendation to the Company Secretary at the following address: 343 Allerton Avenue, South San Francisco, CA 94080 at least 60 days prior, but no more than 90 days prior, to the anniversary date of the last annual meeting of stockholders. Submissions should include the full name, address and age of the proposed nominee, a description of the proposed nominee's business experience for at least the previous five years, complete biographical information, a description of the proposed nominee's qualifications as a director, and the number of shares of our stock beneficially owned by the proposed nominee. The nominating stockholder must also provide his or her name and address of record and the number of shares of our stock that he or she owns beneficially or of record.

The Corporate Governance and Nominating Committee has not established specific minimum qualifications for recommended nominees or specific qualities or skills for one or more of our directors to possess, other than as are necessary to meet any requirements under rules and regulations (including any stock exchange rules) applicable to the Company. The Corporate Governance and Nominating Committee uses a subjective process for identifying and evaluating nominees for director, based on the information available to, and the subjective judgments of, the members of the Committee and our then current needs for the Board as a whole. Although it does not have a formal policy regarding the consideration of diversity, the Corporate Governance and Nominating Committee considers the needs for the Board as a whole when identifying and evaluating nominees and, among other things, considers diversity in background, age, experience, qualifications, attributes and skills in identifying nominees.

The Corporate Governance and Nominating Committee's process for identification and evaluation of director candidates is generally as follows:

- (a) In the event of a vacancy or the establishment of a new directorship on the Board, candidate(s) for director nominee(s) shall be presented to the full Board for consideration and approval upon the recommendation of no less than a majority of the independent members of the Board (as independence is defined under any stock exchange rules that may be applicable to the Company at such time).
- (b) We believe that the continuing service of qualified incumbents promotes stability and continuity in the boardroom, contributing to the Board's ability to work as a collective body, while giving us the benefit of the familiarity and insight into our affairs that our directors have accumulated during their tenure. Accordingly, the process for identifying nominees reflects our practice of re-nominating incumbent directors who continue to satisfy the criteria for membership on the Board, whom the independent members of the Board believe continue to make important contributions to the Board and who consent to continue their service on the Board. Consistent with this policy, in considering candidates for election at annual meetings of stockholders, the independent members of the Board will first determine the incumbent directors whose terms expire at the upcoming meeting and who wish to continue their service on the Board.
- (c) The independent members of the Board will evaluate the qualifications and performance of the incumbent directors that desire to continue their service. In particular, as to each such incumbent director, the independent members of the Board will (i) consider if the director continues to satisfy the minimum qualifications for director candidates adopted by the independent members of the Board, (ii) review any assessments of the performance of the director during the preceding term made by the Board, and (iii) determine whether there exist any special, countervailing considerations against re-nomination of the director.

(d) If the independent members of the Board determine that an incumbent director consenting to re-nomination continues to be qualified and has satisfactorily performed his or her duties as director during the preceding term, and there exist no reasons, including considerations relating to the composition and functional needs of the Board as a whole, why in the view of the independent members of the Board the incumbent should not be re-nominated, the independent members of the Board will, absent special circumstances, propose the incumbent director for reelection.

(e) The process by the independent members of the Board for identifying and evaluating nominees for director, including nominees recommended by a stockholder, involves (with or without the assistance of a retained search firm):

- compiling names of potentially eligible candidates;
- conducting background and reference checks;
- conducting interviews with candidates and/or others;
- meeting to consider and approve final candidates; and, as appropriate,
- preparing and presenting to the full Board an analysis with regard to particular recommended candidates.

During the search process, the independent directors shall endeavor to identify director nominees who have the highest personal and professional integrity, have demonstrated exceptional ability and judgment, and, together with other director nominees and current Board members, shall effectively serve the long-term interests of our stockholders and contribute to our overall corporate goals.

(f) In considering potential new directors, the independent members of the Board will review individuals from various disciplines and backgrounds. Among the qualifications to be considered in the selection of candidates are:

- personal and professional integrity;
- broad experience in business, finance or administration;
- familiarity with our industry; and
- prominence and reputation.

#### **Code of Business Conduct and Ethics**

We have adopted a Code of Business Conduct and Ethics applicable to our employees, officers and directors. Our Code of Business Conduct and Ethics is available on our website at [www.vistagen.com](http://www.vistagen.com). We intend to disclose any future amendments to certain provisions of our Code of Business Conduct and Ethics, or waivers of these provisions, on our website or in filings with the SEC under the Exchange Act.

#### **Board Attendance at Board of Directors, Committee and Stockholder Meetings**

Our Board of Directors met three times and acted by unanimous written consent ten times during the fiscal year ended March 31, 2014. Our Audit Committee met four times and our Compensation Committee requested action by the entire Board of Directors for grants of options and warrants and the modification of certain options and warrants during the same period. Each director serving during fiscal 2014 attended all of the meetings of the Board and the committees of the Board upon which such director served.

We do not have a formal policy regarding attendance by members of the Board at our annual meeting of stockholders, but directors are encouraged to attend. We did not hold an annual meeting of stockholders during our fiscal year ended March 31, 2014.

#### **Compensation Committee Interlocks and Insider Participation**

Our Compensation Committee consists of Dr. Underdown and Mr. Saxe, each of whom is a non-employee director. Neither member of the Compensation Committee has a relationship that would constitute an interlocking relationship with executive officers or directors of another entity.

**Section 16 Beneficial Ownership Reporting Compliance**

Section 16(a) of the Exchange Act requires our officers, directors and persons who beneficially own more than ten percent of our common stock (collectively, *Reporting Persons*) to file reports of ownership on Form 3 and changes in ownership on Form 4 or Form 5 with the Commission. The Reporting Persons are also required by SEC rules to furnish us with copies of all reports that they file pursuant to Section 16(a). Except as described below, we believe that during our fiscal year ended March 31, 2014, all of the Reporting Persons complied with all applicable reporting requirements.

On December 20, 2013, certain of Mr. Saxe's options and warrants were modified to reduce their exercise price. Mr Saxe did not report these derivative security transactions on a Form 4 until December 26, 2013.

**Item 11. Executive Compensation**

***Our Compensation Objectives***

Our compensation practices are designed to attract key employees and to retain, motivate and reward our executive officers for their performance and contribution to our long-term success. Our Board of Directors, through the Compensation Committee, seeks to compensate our executive officers by combining short and long-term cash and equity incentives. It also seeks to reward the achievement of corporate and individual performance objectives, and to align executive officers' incentives with shareholder value creation. The Compensation Committee seeks to tie individual goals to the area of the executive officer's primary responsibility. These goals may include the achievement of specific financial or business development goals. The Compensation Committee seeks to set performance goals that reach across all business areas and include achievements in finance/business development and corporate development.

The Compensation Committee makes decisions regarding salaries, annual bonuses, if any, and equity incentive compensation for our executive officers, approves corporate goals and objectives relevant to the compensation of the Chief Executive Officer and our other executive officers. The Compensation Committee solicits input from our Chief Executive Officer regarding the performance of our other executive officers. Finally, the Compensation Committee also administers our incentive compensation and benefit plans.

Although we have no formal policy for a specific allocation between current and long-term compensation, or cash and non-cash compensation, we have established a pay mix for our officers with a relatively equal balance of both, providing a competitive salary with a significant portion of compensation awarded on both corporate and personal performance.

***Compensation Components***

Our compensation consists primarily of three elements: base salary, annual bonus and long-term equity incentives. We describe each element of compensation in more detail below.

***Base Salary***

Base salaries for our executive officers are established based on the scope of their responsibilities and their prior relevant experience, taking into account competitive market compensation paid by other companies in our industry for similar positions and the overall market demand for such executives at the time of hire. An executive officer's base salary is also determined by reviewing the executive officer's other compensation to ensure that the executive officer's total compensation is in line with our overall compensation philosophy.

Base salaries are reviewed annually and increased for merit reasons, based on the executive officers' success in meeting or exceeding individual objectives. Additionally, we adjust base salaries as warranted throughout the year for promotions or other changes in the scope or breadth of an executive officer's role or responsibilities.

**Annual Bonus**

The Compensation Committee assesses the level of the executive officer's achievement of meeting individual goals, as well as that executive officer's contribution towards our corporate-wide goals. The amount of the cash bonus depends on the level of achievement of the individual performance goals, with a target bonus generally set as a percentage of base salary and based on the achievement of pre-determined milestones. To conserve our cash resources, our management team did not seek, and our Compensation Committee did not award, cash bonuses to executive officers during fiscal 2013 or 2014.

**Long-Term Equity Incentives**

The Compensation Committee believes that to attract and retain management, key employees and non-management directors the compensation paid to these persons should include, in addition to base salary and potential annual cash incentives, equity based compensation that is competitive with peer companies. The Compensation Committee determines the amount and terms of equity based compensation granted under our stock option plans.

**Summary Compensation Table**

The following table shows information regarding the compensation of our Named Executive Officers (*NEO's*) for services performed in the fiscal years ended March 31, 2014 and 2013.

| <b>Name and Principal Position</b>  | <b>Fiscal Year</b> | <b>Salary (\$)</b>     | <b>Bonus (\$)</b> | <b>Option and Warrant Awards <sup>(7)</sup> (\$)</b> | <b>All Other Compensation (\$)</b> | <b>Total (\$)</b> |
|---|--------------------|------------------------|-------------------|--|------------------------------------|-------------------|
| Shawn K. Singh, J.D. <sup>(1)</sup><br><i>Chief Executive Officer</i>                         | 2014               | 250,000 <sup>(4)</sup> | -                 | 159,802 <sup>(8)</sup>                               | -                                  | 409,802           |
|   | 2013               | 201,646                | -                 | 802,411 <sup>(9)(10)</sup>                           | -                                  | 1,004,057         |
| H. Ralph Snodgrass, Ph.D. <sup>(2)</sup><br><i>President, Chief Scientific Officer</i>        | 2014               | 250,000 <sup>(5)</sup> | -                 | 102,353 <sup>(8)</sup>                               | -                                  | 352,353           |
|   | 2013               | 203,086                | -                 | 534,941 <sup>(10)</sup>                              | -                                  | 738,027           |
| Jerrold D. Dotson <sup>(3)</sup><br><i>Vice President, Chief Financial Officer, Secretary</i> | 2014               | 200,000 <sup>(6)</sup> | -                 | 36,846 <sup>(8)</sup>                                | -                                  | 236,846           |
|   | 2013               | 97,269                 | -                 | 134,316 <sup>(11)</sup>                              | 62,333 <sup>(12)</sup>             | 293,918           |

- (1) Mr. Singh became VistaGen California's Chief Executive Officer on August 20, 2009 and our Chief Executive Officer in May 2011, in connection with the Merger. In our fiscal years ended March 31, 2014 and 2013, Mr. Singh's annual base cash salary, excluding potential cash bonus amounts, pursuant to his January 2010 employment agreement was contractually set at \$347,500. However, to conserve cash for our operations during our fiscal years ended March 31, 2014 and 2013, Mr. Singh voluntarily reduced his base cash salary in each of such fiscal years to the amounts indicated. In addition, pursuant to his employment agreement, Mr. Singh is eligible to receive an annual incentive bonus of up to fifty percent (50%) of his base cash salary. However to conserve cash for our operations during our fiscal years ended March 31, 2014 and 2013, Mr. Singh voluntarily refrained from receiving any cash bonus from us.
- (2) Through August 20, 2009, Dr. Snodgrass served as VistaGen California's President and Chief Executive Officer, at which time he became its President and Chief Scientific Officer. He became our President and Chief Scientific Officer in May 2011, in connection with the Merger. In our fiscal years ended March 31, 2014 and 2013, Dr. Snodgrass' annual base cash salary, excluding potential cash bonus amounts, pursuant to his January 2010 employment agreement was contractually set at \$305,000. However, to conserve cash for our operations during our fiscal years ended March 31, 2014 and 2013, Dr. Snodgrass voluntarily reduced his base cash salary in each of such fiscal years to the amounts indicated. In addition, pursuant to his employment agreement, Dr. Snodgrass is eligible to receive an annual incentive bonus of up to fifty percent (50%) of his base cash salary. However to conserve cash for our operations during our fiscal years ended March 31, 2014 and 2012, Dr. Snodgrass voluntarily refrained from receiving any cash bonus from us.

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- (3) Mr. Dotson served as Chief Financial Officer on a part-time contract basis from September 19, 2011 through August 2012, at which time he became our employee.
- (4) Mr. Singh received only \$125,000 in cash in our fiscal year ended March 31, 2014 and the remaining balance has been accrued for future payment.
- (5) Dr. Snodgrass received only \$149,606 in cash in our fiscal year ended March 31, 2014 and the remaining balance has been accrued for future payment.
- (6) Mr. Dotson received only \$143,333 in cash in our fiscal year ended March 31, 2014 and the remaining balance has been accrued for future payment.
- (7) The amounts in the Option and Warrant Awards column represent the aggregate grant date fair value of options or warrants to purchase restricted shares of our common stock awarded to Mr. Singh, Dr. Snodgrass and Mr. Dotson, or the effect of modifications to prior grants of options or warrants occurring during the fiscal year presented, computed in accordance with the Financial Accounting Standards Board's Accounting Standards Codification Topic 718, Compensation – Stock Compensation ("ASC 718"). The amounts in this column do not represent any cash payments actually received by Mr. Singh, Dr. Snodgrass or Mr. Dotson with respect to any of such options or warrants to purchase restricted shares of our common stock awarded to them or modified during the periods presented. Except as indicated in note (9) below, to date, Mr. Singh, Dr. Snodgrass and Mr. Dotson have not exercised such options or warrants to purchase common stock, and there can be no assurance that any of them will ever realize any of the ASC 718 grant date fair value amounts presented in the Option and Warrant Awards column.
- (8) The table below provides information regarding the option and warrant awards and modifications we granted to Mr. Singh, Dr. Snodgrass and Mr. Dotson during fiscal 2014 and the assumptions used in the Black Scholes Option Pricing Model to determine the grant date fair values of the respective awards and modifications.

|                          | Option Grant<br>10/27/2013 | Warrant Grant<br>3/19/2014 | Option Modification<br>12/20/2013 |                      | Warrant Modification<br>12/20/2013 |                     | Option/Warrant<br>Exchange (a)<br>3/19/2014 |         | Total             |
|--------------------------|----------------------------|----------------------------|-----------------------------------|----------------------|------------------------------------|---------------------|---|---------|-------------------|
| Singh                    | \$ -                       | \$ -                       | \$ 134,436                        |                      | \$ 25,366                          |                     | \$ -  |         | \$ 159,802        |
| Snodgrass                | -                          | 14,560                     | 56,835                            |                      | -                                  |                     | 30,958                                      |         | 102,353           |
| Dotson                   | 6,380                      | 29,120                     | 1,346                             |                      | -                                  |                     | -   |         | 36,846            |
|                          | <u>\$ 6,380</u>            | <u>\$ 43,680</u>           | <u>\$ 192,617</u>                 |                      | <u>\$ 25,366</u>                   |                     | <u>\$ 30,958</u>                            |         | <u>\$ 299,001</u> |
|                          |                            |                            | Before                            | After                | Before                             | After               | Before                                      | After   |                   |
| Market price per share   | \$ 0.40                    | \$ 0.46                    | \$ 0.40                           | \$ 0.40              | \$ 0.40                            | \$ 0.40             | \$ 0.46                                     | \$ 0.46 |                   |
| Exercise price per share | \$ 0.40                    | \$ 0.50                    | \$ 0.75 to<br>\$2.10              | \$ 0.50              | \$ 0.50<br>to \$1.75               | \$ 0.50             | \$ 0.50                                     | \$ 0.50 | \$ 0.50           |
| Risk-free interest rate  | 1.675%                     | 1.750%                     | 0.7% to<br>2.68%                  | 0.12% to<br>2.68%    | 0.07% to<br>1.18%                  | 0.75% to<br>1.18%   | 0.106%                                      | 1.750%  |                   |
| Volatility               | 99.53%                     | 80.57%                     | 68.8% to<br>97.6%                 | 68.8% to<br>97.6%    | 68.76% to<br>78.21%                | 76.51% to<br>78.21% | 68.96%                                      | 80.57%  |                   |
| Expected term (years)    | 6.25                       | 5.00                       | 0.25 to<br>8.86                   | 0.87 to<br>8.86      | 0.03 to<br>3.96                    | 3.03 to<br>3.96     | 0.63  | 5.00    |                   |
| Dividend rate            | 0%                         | 0%                         | 0%                                | 0%                   | 0%                                 | 0%                  | 0%  | 0%      |                   |
| Fair value per share     | \$ 0.32                    | \$ 0.29                    | \$ 0.00 to<br>\$0.32              | \$ 0.07 to<br>\$0.34 | \$ 0.00 to<br>\$0.11               | \$0.18 to<br>\$0.21 | \$ 0.08                                     | \$ 0.29 |                   |
| Aggregate shares         | 20,000                     | 150,000                    | 2,322,500                         | 2,322,500            | 166,052                            | 166,052             | 150,000                                     | 150,000 |                   |

(a) On March 19, 2014, the Board and Dr. Snodgrass agreed to cancel a fully-vested option to purchase 150,000 shares of our restricted common stock at a price of \$0.50 per share and expiring on November 4, 2014 in exchange for the grant of a five-year warrant to purchase 150,000 shares of our restricted common stock at a price of \$0.50 per share. Shares subject to the cancelled option grant were returned to the 2008 Stock Incentive Plan for potential future grants. The cancellation of the option and grant of the warrant was accounted for as a modification of an award under ASC 718 and, accordingly, the difference in the fair value of the two instruments at the modification date was recorded in stock compensation expense and is the amount reported in the table above.

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(9) In June and October 2013, Mr. Singh exercised warrants granted to him in March 2013, described in Note 10, below, to purchase an aggregate of 60,000 shares of our restricted common stock at \$0.64 per share. Mr. Singh continues to hold the shares of our restricted common stock issued upon his exercise of the warrants.

(10) We used the Black Scholes Option Pricing Model and the following assumptions for determining the grant date fair value of the warrants to purchase shares of our common stock granted in March 2013.

|                                 |        |
|---------------------------------|--------|
| Market price per share          | \$0.64 |
| Exercise price per share        | \$0.64 |
| Risk-free interest rate         | 1.86%  |
| Expected Term (years)           | 10.0   |
| Volatility                      | 84.73% |
| Dividend rate                   | 0.0%   |
| Grant date fair value per share | \$0.53 |

Mr. Singh, Dr. Snodgrass and Mr. Dotson were granted warrants to purchase 1,500,000, 1,000,000 and 200,000 restricted shares of our common stock, respectively.

(11) In October 2012, we modified the stock option award granted to Mr. Dotson in September 2011 to reduce the exercise price of the option from \$2.58 per share to \$0.75 per share and granted him a new stock option to purchase an additional 50,000 restricted shares of our common stock. We used the Black Scholes Option Pricing Model and the following assumptions to determine incremental fair value of the modified option and the grant date fair value of \$0.51 per share for the new option: market price per share: \$0.71; exercise price per share: \$0.75; risk-free interest rate: 1.00%; expected term: 6.25 years; volatility 85.35%; dividend rate: 0%. The figure reported includes (i) the grant date fair value of the warrant granted to Mr. Dotson, determined in accordance with the assumptions described in note 5 above, \$106,988; (ii) the fair value of the new option, \$25,385; and (iii) the incremental fair value resulting from the modification of the September 2011 stock option grant, \$1,943.

(12) Amount shown represent cash compensation paid to Mr. Dotson under the terms of the consulting agreement between us and Mr. Dotson for the period April 2012 through August 2012.

None of the NEOs is entitled to perquisites or other personal benefits which, in the aggregate, are worth over \$50,000 or over 10% of their base salary.

**Benefit Plans**

**401(k) Plan**

We maintain, through a registered agent, a retirement and deferred savings plan for our officers and employees. This plan is intended to qualify as a tax-qualified plan under Section 401(k) of the Internal Revenue Code of 1986, as amended. The retirement and deferred savings plan provides that each participant may contribute a portion of his or her pre-tax compensation, subject to statutory limits. Under the plan, each employee is fully vested in his or her deferred salary contributions. Employee contributions are held and invested by the plan's trustee. The retirement and deferred savings plan also permits us to make discretionary contributions subject to established limits and a vesting schedule. To date, we have not made any discretionary contributions to the retirement and deferred savings plan on behalf of participating employees.

**Options and Warrants Granted to NEOs**

The following table provides information regarding each unexercised stock option and warrant to purchase restricted shares of our common stock held by each of the named executive officers as of March 31, 2014.

| Name                      | Stock Options   |   |                            |                        |
|---------------------------|---|---|----------------------------|------------------------|
|                           | Number of Securities Underlying Unexercised Options (#) Exercisable | Number of Securities Underlying Unexercised Options (#) Unexercisable | Option Exercise Price (\$) | Option Expiration Date |
| Shawn K. Singh, J.D.      | 20,000  | -   | 0.80                       | 12/21/2016             |
|                           | 40,000  | -   | 0.72                       | 5/17/2017              |
|                           | 20,000  | -   | 0.50                       | 1/17/2018              |
|                           | 20,000  | -   | 0.50                       | 1/17/2018              |
|                           | 60,000  | -   | 0.50                       | 3/24/2019              |
|                           | 22,500  | -   | 0.50                       | 6/17/2019              |
|                           | 1,000,000   | -   | 0.50                       | 11/4/2019              |
|                           | 425,000   | -   | 0.50                       | 12/30/2019             |
|                           | 72,916  | 27,084  | 0.50                       | 4/25/2021              |
|                           | 80,338  | -   | 0.50                       | 12/31/2016             |
|                           | 35,714  | -   | 0.50                       | 12/31/2016             |
|                           | 50,000  | -   | 0.50                       | 12/6/2017              |
|                           | 100,000   | -   | 1.00                       | 7/30/2016              |
| <b>Total:</b>             | <b>2,636,468</b>  | <b>750,000 <sup>(1)</sup></b>   | <b>0.64</b>                | <b>3/3/2023</b>        |
| H. Ralph Snodgrass, Ph.D. | 50,000  | -   | 0.50                       | 3/24/2019              |
|                           | 25,000  | -   | 0.50                       | 6/17/2014              |
|                           | 6,362   | -   | 0.88                       | 12/20/2016             |
|                           | 250,000   | -   | 0.50                       | 12/30/2019             |
|                           | 72,916  | 27,084  | 0.50                       | 4/25/2021              |
|                           | 500,000   | 500,000 <sup>(1)</sup>  | 0.64                       | 3/3/2023               |
|                           | -   | 50,000 <sup>(2)</sup>   | 0.50                       | 3/19/2024              |
|                           | -   | 150,000 <sup>(2)</sup>  | 0.50                       | 3/19/2024              |
| <b>Total:</b>             | <b>904,278</b>  | <b>727,084</b>  |                            |                        |
| Jerrold D. Dotson         | 74,782  | 25,218  | 0.50                       | 10/30/2022             |
|                           | 4,166   | 15,834  | 0.40                       | 10/27/2023             |
|                           | 100,000   | 100,000 <sup>(1)</sup>  | 0.64                       | 3/3/2023               |
|                           | -   | 100,000 <sup>(2)</sup>  | 0.50                       | 3/19/2024              |
| <b>Total:</b>             | <b>178,948</b>  | <b>241,052</b>  |                            |                        |

(1) Represents warrant to purchase restricted shares of our common stock granted on March 3, 2013 at the market price of our common stock on the grant date. The warrant becomes exercisable for 50% of the shares on April 1, 2013, 25% of the shares on April 1, 2014 and 25% of the shares on April 1, 2015, provided that the warrant will become fully vested upon a change in control of the Company, as defined, or upon the consummation by the Company and a third party of a license or sale transaction involving at least one new drug rescue variant.

(2) Represents warrant to purchase restricted shares of our common stock granted on March 19, 2014 when the market price of our common stock was \$0.46 per share. The warrant becomes exercisable for 50% of the shares on April 1, 2014, 25% of the shares on April 1, 2015 and 25% of the shares on April 1, 2016, provided that the warrant will become fully vested upon a change in control of the Company, as defined, or upon the consummation by the Company and a third party of a license or sale transaction involving at least one new drug rescue variant.

## Employment or Severance Agreements

We have employment agreements with Mr. Singh and Dr. Snodgrass.

### *Singh Agreement*

We entered into an employment agreement with Mr. Singh on April 28, 2010. Under the agreement, as amended on May 9, 2011, Mr. Singh's base salary is \$347,500 per year. However, Mr. Singh has not received his full base salary in any fiscal year since he entered into his agreement in 2010. In each of our fiscal years ended March 31, 2014, 2013, 2012 and 2011, Mr. Singh voluntarily reduced his base salary to \$250,000, \$201,646, 292,268 and \$168,274, respectively, to conserve cash for our operations. Although, under his agreement, Mr. Singh is eligible to receive an annual incentive cash bonus of up to 50% of his base salary, he has voluntarily foregone any such cash bonus payment to conserve cash for our operations. Payment of his annual incentive bonus is at the discretion of our board of directors. In the event we terminate Mr. Singh's employment without cause, he is entitled to receive severance in an amount equal to:

- twelve months of his then-current base salary payable in the form of salary continuation;
- a pro-rated portion of the incentive cash bonus that the board of directors determines in good faith that Mr. Singh earned prior to his termination; and
- such amounts required to reimburse him for Consolidated Omnibus Budget Reconciliation Act (*COBRA*) payments for continuation of his medical health benefits for such twelve-month period.

In addition, in the event Mr. Singh terminates his employment with good reason following a change of control, he is entitled to twelve months of his then-current base salary payable in the form of salary continuation.

In December 2006, we accepted a full-recourse promissory note in the amount of \$103,411 from Mr. Singh in payment of the exercise price for options and warrants to purchase an aggregate of 126,389 shares of our common stock. On May 11, 2011, in connection with the Merger, the \$128,168 outstanding balance of the principal and accrued interest on this note was cancelled in accordance with Mr. Singh's employment agreement and was treated as additional compensation. In accordance with his employment agreement, Mr. Singh is entitled to an income tax gross-up payment on the compensation related to the note cancellation. At March 31, 2014 and 2013, we had accrued \$101,936 as an estimate of the gross-up amount. However, at Mr. Singh's suggestion, we have not yet paid such amount to Mr. Singh to conserve capital for our operations. See Notes 10 and 15 to our audited consolidated financial statements which are included elsewhere in this Annual Report on Form 10-K.

### *Snodgrass Agreement*

We entered into an employment agreement with Dr. Snodgrass on April 28, 2010. As amended on May 9, 2011, under the agreement, Dr. Snodgrass's base salary is \$305,000 per year. However, in our fiscal years ended March 31, 2014, 2013, 2012 and 2011, Dr. Snodgrass voluntarily reduced his annual salary to \$250,000, \$203,086, \$249,266 and \$141,486, respectively, to conserve cash for our operations. Dr. Snodgrass is eligible to receive an annual incentive cash bonus of up to 50% of his base salary. Payment of his annual incentive bonus is at the discretion of the board of directors. In the event we terminate Dr. Snodgrass's employment without cause, he is entitled to receive severance in an amount equal to

- twelve months of his then-current base salary payable in the form of salary continuation;
- a pro-rated portion of the incentive bonus that the board of directors determines in good faith that Dr. Snodgrass earned prior to his termination; and
- such amounts required to reimburse him for COBRA payments for continuation of his medical health benefits for such twelve-month period.



In addition, in the event Dr. Snodgrass terminates his employment with good reason, he is entitled to twelve months of his then-current base salary payable in the form of salary continuation.

**Change of Control Provisions**

Pursuant to each of their respective employment agreements, Dr. Snodgrass is entitled to severance if he terminates his employment at any time for "good reason" (as defined below), while Mr. Singh is entitled to severance if he terminates his employment for good reason after a change of control. Under their respective agreements, "good reason" means any of the following events, if the event is effected by us without the executive's consent (subject to our right to cure):

- a material reduction in the executive's responsibility; or
- a material reduction in the executive's base salary following the Merger except for reductions that are comparable to reductions generally applicable to similarly situated executives of VistaGen.

Furthermore, pursuant to their respective employment agreements and their stock option award agreements as amended, in the event we terminate the executive without cause within twelve months of a change of control, the executive's remaining unvested shares become fully vested and exercisable. Upon a change of control in which the successor corporation does not assume the executive's stock options, the stock options granted to the executive become fully vested and exercisable.

Pursuant to their respective employment agreements, a change of control occurs when: (i) any "person" as such term is used in Sections 13(d) and 14(d) of the Exchange Act (other than VistaGen, a subsidiary, an affiliate, or a VistaGen employee benefit plan, including any trustee of such plan acting as trustee) becoming the "beneficial owner" (as defined in Rule 13d-3 under the Exchange), directly or indirectly, of securities of VistaGen representing 50% or more of the combined voting power of VistaGen's then outstanding securities; (ii) a sale of substantially all of VistaGen's assets; or (iii) any merger or reorganization of VistaGen whether or not another entity is the survivor, pursuant to which the holders of all the shares of capital stock of VistaGen outstanding prior to the transaction hold, as a group, fewer than 50% of the shares of capital stock of VistaGen outstanding after the transaction.

In the event that following termination of employment amounts are payable to an executive pursuant to his employment agreement, the executive's eligibility for severance is conditioned on executive having first signed a release agreement.

Pursuant to their respective employment agreements, the estimated amount that could be paid by us assuming that a change of control occurred on the last business day of our current fiscal year, is \$347,500 for Mr. Singh and \$305,000 for Dr. Snodgrass, excluding the imputed value of accelerated vesting of incentive stock options, if any.

**DIRECTOR COMPENSATION**

We do not have a formal compensation plan for our non-employee directors. Our informal plan prescribes that the Chairman of our board of directors, who is an independent director, has, since October 1, 2011, earned \$2,500 per quarter. Our other independent directors have earned \$2,000 per quarter since that date. Beginning in July 2011, the Chairman of our Audit Committee and each independent director who serves as a member of our Audit Committee have also earned \$1,000 quarterly. In addition, from time to time, our independent directors may receive non-qualified stock option, warrants or other equity-based awards. We did not pay our independent directors cash compensation during our fiscal year ended March 31, 2014.

The following table sets forth a summary of the compensation earned by our non-employee directors in our fiscal year ended March 31, 2014.

| Name                                     | Fees Earned or Paid in Cash <sup>(1)</sup><br>(S) | Option and Warrant Awards <sup>(2)</sup><br>(S) | Other Compensation<br>(S) | Total<br>(S) |
|--|---|---|---------------------------|--------------|
| Jon S. Saxe <sup>(3)</sup>               | 14,000  | 40,683 <sup>(5)</sup>                           | -                         | 54,683       |
| Brian J. Underdown, Ph.D. <sup>(4)</sup> | 12,000  | 32,267 <sup>(5)</sup>                           | -                         | 44,267       |

- The amounts shown represent fees earned for service on our Board of Directors and Audit Committee during the fiscal year which we have accrued but have not paid to the director at March 31, 2014.
- The amounts in this column represent the aggregate grant date fair value of warrants to purchase restricted shares of our common stock awarded to Mr. Saxe and Dr. Underdown or the effect of modifications to prior grants of options or warrants occurring during the fiscal year ended March 31, 2014, computed in accordance with the Financial Accounting Standards Board's Accounting Standards Codification Topic 718, Compensation – Stock Compensation ("ASC 718"). The amounts in this column do **not** represent any cash payment actually received by Mr. Saxe or Dr. Underdown with respect to any of such options or warrants to purchase restricted shares of our common stock awarded to them or modified during the fiscal year ended March 31, 2014. To date, Mr. Saxe and Dr. Underdown have not exercised such options or warrants to purchase common stock, and there can be no assurance that either of them will ever realize any of the ASC 718 grant date fair value amounts presented in the Option and Warrant Awards column.
- Mr. Saxe has served as the Chairman of our Board of Directors and the Chairman of our Audit Committee throughout our fiscal year ended March 31, 2014. At March 31, 2014, Mr. Saxe holds: (i) 37,492 restricted shares of our common stock; (ii) options to purchase 264,750 restricted shares of our common stock, of which options to purchase 251,208 restricted shares are vested; and (iii) warrants to purchase 265,000 restricted shares of our common stock, of which 125,000 are exercisable.
- Dr. Underdown has served as a member of our Board of Directors and a member of our Audit Committee throughout our fiscal year ended March 31, 2014. At March 31, 2014, Dr. Underdown holds: (i) options to purchase 185,000 restricted shares of our common stock, of which options to purchase 171,458 restricted shares are vested; and (ii) warrants to purchase 250,000 restricted shares of our common stock, of which 125,000 are exercisable.
- The table below provides information regarding the warrant awards and option and warrant modifications we granted to Mr. Saxe and Dr. Underdown during fiscal 2014 and the assumptions used in the Black Scholes Option Pricing Model to determine the grant date fair values of the respective awards and modifications.

|                          | Warrant Grant<br>3/19/2014 | Option Modification<br>12/20/2013 |                   | Warrant Modification<br>12/20/2013 |          | Total            |
|--------------------------|----------------------------|-----------------------------------|-------------------|------------------------------------|----------|------------------|
|                          |                            | Before                            | After             | Before                             | After    |                  |
| Saxe                     | \$ 18,928                  |                                   | \$ 15,291         | \$ 6,464                           | \$ 6,464 | \$ 40,683        |
| Underdown                | 14,560                     |                                   | 11,243            |                                    | 6,464    | 32,267           |
|                          | <u>\$ 33,488</u>           |                                   | <u>\$ 26,534</u>  | <u>\$ 12,928</u>                   |          | <u>\$ 72,950</u> |
| Market price per share   | \$ 0.46                    | \$ 0.40                           | \$ 0.40           | \$ 0.40                            | \$ 0.40  | \$ 0.40          |
| Exercise price per share | \$ 0.50                    | \$ 1.13 to \$2.10                 | \$ 0.50           | \$ 3.00                            | \$ 0.50  | \$ 0.50          |
| Risk-free interest rate  | 1.750%                     | 1.24% to 2.40%                    | 1.24% to 2.40%    | 4.25%                              | 4.25%    | 4.25%            |
| Volatility               | 80.57%                     | 78.9% to 97.62%                   | 78.9% to 97.62%   | 76.10%                             | 76.10%   | 76.10%           |
| Expected term (years)    | 5.00                       | 4.08 to 7.35                      | 4.08 to 7.35      | 2.15                               | 2.15     | 2.15             |
| Dividend rate            | 0%                         | 0%                                | 0%                | 0%                                 | 0%       | 0%               |
| Fair value per share     | \$ 0.29                    | \$ 0.10 to \$0.27                 | \$ 0.21 to \$0.32 | \$ 0.02                            | \$ 0.14  | \$ 0.14          |
| Aggregate shares         | 115,000                    | 422,500                           | 422,500           | 100,000                            | 100,000  |                  |

**Changes to Director Compensation for Fiscal Year Ending March 31, 2015**

We have adopted a new director compensation policy for our independent directors, as independence is defined by the Nasdaq Stock Market, which became effective for our fiscal year beginning April 1, 2014. Under the new independent director compensation policy, our independent directors will receive a \$25,000 annual cash retainer. For service on a committee of the board, an independent director will receive an additional annual cash retainer as follows: \$7,500 for audit and compensation committee members and \$5,000 for nominating and governance committee members. In lieu of the annual cash retainer for committee participation, each independent director serving as a chair of a board committee shall receive the following annual cash retainer: \$15,000 for audit and compensation committee chairs and \$10,000 for the nominating and governance committee chairs. Each independent director will also receive an annual grant of an option to purchase 25,000 shares, which will vest monthly over a one-year period from the date of grant. The first grant of options under this policy will be made effective as soon as practicable following April 1, 2014. Future grants are expected to be made on the same date as our annual meeting. Prorated option grants will be made for partial years of service.

**Director Independence**

Our securities are not currently listed on a national securities exchange or on any inter-dealer quotation system which has a requirement that directors be independent, or that a majority of our directors be independent. However, we evaluate independence by the standards for director independence established by applicable laws, rules, and listing standards, including, without limitation, the standards for independent directors established by the SEC, the New York Stock Exchange, Inc. and the Nasdaq National Market.

Subject to some exceptions, these standards generally provide that a director will not be independent if (a) the director is, or in the past three years has been, an employee of ours; (b) a member of the director's immediate family is, or in the past three years has been, an executive officer of ours; (c) the director or a member of the director's immediate family has received more than \$120,000 per year in direct compensation from us other than for service as a director (or for a family member, as a non-executive employee); (d) the director or a member of the director's immediate family is, or in the past three years has been, employed in a professional capacity by our independent public accountants, or has worked for such firm in any capacity on our audit; (e) the director or a member of the director's immediate family is, or in the past three years has been, employed as an executive officer of a company where one of our executive officers serves on the compensation committee; or (f) the director or a member of the director's immediate family is an executive officer of a company that makes payments to, or receives payments from, us in an amount which, in any twelve-month period during the past three years, exceeds the greater of \$1,000,000 or two percent of that other company's consolidated gross revenues.

Our board of directors has undertaken a review of its composition, the composition of its committees and the independence of each director. Based upon information requested from and provided by each director concerning his background, employment and affiliations, including family relationships, our board of directors has determined that Mr. Saxe and Dr. Underdown are "independent" as that term is defined under the applicable rules and regulations of the SEC. Our board of directors has also determined that Mr. Saxe and Dr. Underdown, who comprise our audit committee, compensation committee, corporate governance and nominating committee, satisfy the independence standards for those committees established by applicable SEC rules. In making these determinations, our board of directors considered the current and prior relationships that each non-employee director has with our company and all other facts and circumstances that our board of directors deemed relevant.

**Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.**

The following table sets forth certain information with respect to the beneficial ownership of our common stock as of June 19, 2014 for

- each stockholder known by us to be the beneficial owner of more than 5% of our common stock;
- each of our directors;
- each of our named executive officers; and
- all of our directors and executive officers as a group.

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We have determined beneficial ownership in accordance with the rules of the SEC. Except as indicated by the footnotes below, we believe, based on the information furnished to us, that the persons and entities named in the table below have sole voting and investment power with respect to all of the capital stock that they beneficially own, subject to applicable community property laws.

Applicable percentage ownership is based on 25,451,877 shares of capital stock outstanding at June 19, 2014. In computing the number of shares of common stock beneficially owned by a person, we deemed to be outstanding all shares of common stock subject to options or warrants held by that person or entity that are currently exercisable or that will become exercisable within 60 days of June 19, 2014 and all shares of common stock issuable pursuant to promissory notes and related accrued interest convertible into shares of common stock at June 19, 2014. In computing the percentage of shares beneficially owned, we deemed to be outstanding all shares of common stock subject to options or warrants held by that person or entity that are currently exercisable or that will become exercisable within 60 days of June 19, 2014 and all shares of common stock issuable pursuant to promissory notes and related accrued interest convertible into shares of common stock at June 19, 2014. Unless otherwise noted below, the address of each beneficial owner listed in the table is c/o VistaGen Therapeutics, Inc., 343 Allerton Avenue, South San Francisco, California 94080.

| Name and address of beneficial owner  | Number of shares<br>beneficially owned | Percent of shares<br>beneficially owned |
|---|--|---|
| <i>Executive officers and directors</i>                                     |  |   |
| Shawn K. Singh, JD <sup>(1)</sup>   | 3,476,575                              | 12.19%                                  |
| H. Ralph Snodgrass, PhD <sup>(2)</sup>                                      | 2,467,079                              | 9.23%                                   |
| Jerrold D. Dotson <sup>(3)</sup>  | 309,410                                | 1.20%                                   |
| Jon S. Saxe <sup>(4)</sup>  | 473,116                                | 1.83%                                   |
| Brian J. Underdown, PhD <sup>(5)</sup>                                      | 363,124                                | 1.41%                                   |
| <i>5% Stockholders</i>  |  |   |
| Cato BioVentures <sup>(6)</sup>   | 4,687,165                              | 17.47%                                  |
| Platinum Long Term Growth Fund VII <sup>(7)</sup>                           | 1,540,000                              | 6.05%                                   |
| Morrison & Foerster LLP <sup>(8)</sup>                                      | 2,199,567                              | 8.01%                                   |
| David Young <sup>(9)</sup>  | 2,100,498                              | 7.88%                                   |
| University Health Network <sup>(10)</sup>                                   | 1,748,188                              | 6.71%                                   |
| All executive officers and directors as a group (5 persons) <sup>(11)</sup> | 7,089,304                              | 23.95%                                  |

- (1) Includes options to purchase 1,688,749 restricted shares of common stock exercisable within 60 days of June 19, 2014; warrants to purchase 1,331,052 restricted shares of common stock exercisable within 60 days of June 16, 2014, and 44,600 restricted shares of common stock upon conversion of a currently convertible promissory note and accrued interest.
- (2) Includes options to purchase 412,611 restricted shares of common stock exercisable within 60 days of June 19, 2014 and warrants to purchase 850,000 restricted shares of common stock exercisable within 60 days of June 19, 2014.
- (3) Includes options to purchase 109,410 restricted shares of common stock exercisable within 60 days of June 19, 2014, including options to purchase 12,718 shares of common stock held by Mr. Dotson's wife, and warrants to purchase 200,000 restricted shares of common stock exercisable within 60 days of June 19, 2014.
- (4) Includes options to purchase 240,624 restricted shares of common stock exercisable within 60 days of June 19, 2014 and warrants to purchase 195,000 restricted shares of common stock exercisable within 60 days of June 19, 2014.

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- (5) Includes options to purchase 175,624 restricted shares of common stock exercisable within 60 days of June 19, 2014 and warrants to purchase 187,500 restricted shares of common stock exercisable within 60 days of June 19, 2014.
- (6) Based upon information contained in Form 4 filed on January 9, 2012. Includes currently exercisable warrants to purchase 1,376,329 shares of restricted common stock. Dr. Allen E. Cato, Ph.D., M.D. is deemed to have voting and investment authority over the shares held by Cato Holding Company. The primary business address of Cato BioVentures is 4364 South Alston Avenue, Durham, North Carolina 27713.
- (7) Based upon information contained in Schedule 13G/A filed on February 14, 2014, we believe that Platinum has transferred or assigned 15% of its holdings of our common stock and other securities as of December 31, 2013 to another party. The figures reported in the table above and in this note reflect the impact of Platinum's transfer or assignment and are adjusted for securities sold to Platinum in transactions on April 1, 2014, May 14, 2014 and June 18, 2014, including an aggregate of 750,000 restricted shares of our common stock, currently exercisable warrants to purchase 750,000 shares of our restricted common stock (subject to beneficial ownership restrictions noted below); and three currently convertible promissory notes (subject to beneficial ownership restrictions noted below). The number of beneficially owned shares reported at June 19, 2014 includes 1,540,000 restricted shares of common stock owned by Platinum.
- The reported number of shares beneficially owned excludes 12,750,000 restricted shares of common stock and a warrant to purchase 6,375,000 restricted shares of common stock that may currently be acquired by Platinum upon exchange of 425,000 restricted shares of our Series A Preferred Stock. Pursuant to the October 11, 2012 Note Exchange and Purchase Agreement by and between us and Platinum, there is a limitation on exchange such that the number of shares of our common stock that may be acquired by Platinum upon exchange of the Series A Preferred Stock is limited to the extent necessary to ensure that, following such exchange, the total number of shares of our common stock then beneficially owned by Platinum does not exceed 9.99% of the total number of our issued and outstanding shares of common stock without providing us with 61 days' prior notice thereof.
- Further, the reported number of shares beneficially owned also excludes an aggregate of 10,942,464 restricted shares of our Common Stock that may be acquired by Platinum upon (i) conversion of various Senior Secured Convertible Promissory Notes in the aggregate face amount of \$3,522,577 and a Subordinate Convertible Promissory Note in the face amount of \$250,000 (together, the "Convertible Notes") plus accrued but unpaid interest or (ii) exercise of various common stock purchase warrants to purchase an aggregate of 3,494,190 restricted shares of our common stock. Pursuant to the terms of the respective Convertible Notes and common stock purchase warrant agreements, there is a limitation on conversion of the Convertible Notes and exercise of the warrants such that the number of shares of common stock that Platinum may acquire upon such conversion or exercise is limited to the extent necessary to ensure that, following such conversion or exercise, the total number of shares of common stock then beneficially owned by Platinum does not exceed 4.99% or 9.99% of the total number of issued and outstanding shares of our common stock without providing us with 61 days' prior notice thereof.
- Including the shares otherwise excluded due to the beneficial ownership restrictions noted above, Platinum beneficially owns 31,857,464 shares or 57.12% of our common stock. The primary business address of Platinum Long Term Growth Fund VII is 152 West 57<sup>th</sup> Street, 54<sup>th</sup> Floor, New York, New York 10019. Mark Nordlicht has voting and investment control over the shares held by Platinum.
- (8) Includes currently exercisable warrants to purchase 1,999,567 restricted shares of common stock. The primary business address of Morrison & Foerster is 555 Market Street, San Francisco, California 94105.
- (9) Includes currently exercisable warrants to purchase 658,728 restricted shares of common stock and 537,556 restricted shares of common stock upon conversion of currently convertible promissory notes and accrued interest. Mr. Young's primary business address is c/o Coldwell Banker Residential Brokerage, 580 El Camino Real, San Carlos, California 94070.
- (10) Includes currently exercisable warrants to purchase 610,133 restricted shares of common stock. The primary business address of University Health Network is 101 College Street, Suite 150, Toronto, Ontario Canada M5G 1L7.

- (11) Includes options to purchase an aggregate of 2,627,018 restricted shares of common stock exercisable within 60 days of June 19, 2014, warrants to purchase an aggregate of 2,763,552 restricted shares of common stock exercisable within 60 days of June 19, 2014 and 44,600 restricted shares of common stock upon conversion of a currently convertible promissory note and accrued interest.

**Securities Authorized for Issuance Under Equity Compensation Plans**

**Equity Grants**

As of March 31, 2014, options to purchase a total of 4,249,271 restricted shares of our common stock are outstanding at a weighted average exercise price of \$0.50 per share, of which 3,655,061 options are vested and exercisable at a weighted average exercise price of \$0.50 per share and 593,867 are unvested and not exercisable at a weighted average exercise price of \$0.51 per share. These options were issued under our 2008 Plan and our 1999 Plan, each as described below. At March 31, 2014, an additional 735,200 shares remain available for future equity grants under our 2008 Plan.

| Plan category  | Number of securities<br>to be issued upon<br>exercise of<br>outstanding options,<br>warrants and rights<br>(a) | Weighted-average<br>exercise<br>price of<br>outstanding<br>options, warrants<br>and rights<br>(b) | Number of securities<br>remaining available for<br>future issuance under equity<br>compensation plans<br>(excluding securities<br>reflected in column (a))<br>(c) |
|--|--|---|---|
| Equity compensation plans approved by security holders     | 3,964,800  | \$ 0.50   | 735,200   |
| Equity compensation plans not approved by security holders | 284,471  | 0.59  | --  |
| <b>Total</b>   | <b>4,249,271</b>   | <b>\$ 0.50</b>  | <b>735,200</b>  |

**2008 Stock Incentive Plan**

Shareholders of VistaGen California adopted our 2008 Plan on December 19, 2008 and we assumed the plan in connection with the Merger (as defined in Item 7 below). The maximum number of shares of common stock that may be granted pursuant to the 2008 Plan is 5,000,000. In all cases, the maximum number of shares of common stock under the 2008 Plan will be subject to adjustments for stock splits, stock dividends or other similar changes in our common stock or our capital structure. Notwithstanding the foregoing, the maximum number of shares of common stock available for grant of options intended to qualify as "incentive stock options" under the provisions of Section 422 of the Internal Revenue Code of 1986 (the "Code"), is 5,000,000.

Our 2008 Plan provides for the grant of stock options, restricted shares of common stock, stock appreciation rights and dividend equivalent rights, collectively referred to as "awards". Stock options granted under the 2008 Plan may be either incentive stock options under the provisions of Section 422 of the Code, or non-qualified stock options. We may grant incentive stock options only to employees of VistaGen or any parent or subsidiary of VistaGen. Awards other than incentive stock options may be granted to employees, directors and consultants.

Our Board of Directors or the Compensation Committee of the Board of Directors, referred to as the "Administrator", administers our 2008 Plan, including selecting the award recipients, determining the number of shares to be subject to each award, the exercise or purchase price of each award and the vesting and exercise periods of each award.

The exercise price of all incentive stock options granted under our 2008 Plan must be at least equal to 100% of the fair market value of the shares on the date of grant. If, however, incentive stock options are granted to an employee who owns stock possessing more than 10% of the voting power of all classes of our stock or the stock of any of our subsidiaries, the exercise price of any incentive stock option granted may not be less than 110% of the fair market value on the grant date. The maximum term of incentive stock options granted to employees who own stock possessing more than 10% of the voting power of all classes of our stock or the stock of any of our subsidiaries may not exceed five years. The maximum term of an incentive stock option granted to any other participant may not exceed ten years. The Administrator determines the term and exercise or purchase price of all other awards granted under our 2008 Plan.

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Under the 2008 Plan, incentive stock options may not be sold, pledged, assigned, hypothecated, transferred or disposed of in any manner other than by will or by the laws of descent or distribution and may be exercised, during the lifetime of the participant, only by the participant. Other awards shall be transferable:

- by will and by the laws of descent and distribution; and
- during the lifetime of the participant, to the extent and in the manner authorized by the Administrator by gift or pursuant to a domestic relations order to members of the participant's immediate family.

The 2008 Plan permits the designation of beneficiaries by holders of awards, including incentive stock options.

In the event of termination of a participant's service for any reason other than disability or death, such participant may, but only during the period specified in the award agreement of not less than 30 days (generally 90 days) commencing on the date of termination (but in no event later than the expiration date of the term of such award as set forth in the award agreement), exercise the portion of the participant's award that was vested at the date of such termination or such other portion of the participant's award as may be determined by the Administrator. The participant's award agreement may provide that upon the termination of the participant's service for cause, the participant's right to exercise the award shall terminate concurrently with the termination of the participant's service. In the event of a participant's change of status from employee to consultant, an employee's incentive stock option shall convert automatically into a non-qualified stock option on the day three months and one day following such change in status. To the extent that the participant's award was unvested at the date of termination, or if the participant does not exercise the vested portion of the participant's award within the period specified in the award agreement of not less than 30 days commencing on the date of termination, the award shall terminate. If termination was caused by death or disability, any options which have become exercisable prior to the time of termination, will remain exercisable for twelve months from the date of termination (unless a shorter or longer period of time is determined by the Administrator).

Following the date that the exemption from application of Section 162(m) of the Code ceases to apply to awards, the maximum number of shares with respect to which options and stock appreciation rights may be granted to any participant in any calendar year will be 2,500,000 shares of common stock. In connection with a participant's commencement of service with us, a participant may be granted options and stock appreciation rights for up to an additional 500,000 shares that will not count against the foregoing limitation. In addition, following the date that the exemption from application of Section 162(m) of the Code ceases to apply to awards, for awards of restricted stock and restricted shares of common stock that are intended to be "performance-based compensation" (within the meaning of Section 162(m)), the maximum number of shares with respect to which such awards may be granted to any participant in any calendar year will be 2,500,000 shares of common stock. The limits described in this paragraph are subject to adjustment in the event of any change in our capital structure as described below.

The terms and conditions of awards are determined by the Administrator, including the vesting schedule and any forfeiture provisions. Awards under the plan may vest upon the passage of time or upon the attainment of certain performance criteria. Although we do not currently have any awards outstanding that vest upon the attainment of performance criteria, the Administrator may establish criteria based on any one of, or combination of, the following:

- increase in share price;
- earnings per share;
- total shareholder return;
- operating margin;
- gross margin;
- return on equity;
- return on assets;
- return on investment;
- operating income;
- net operating income;
- pre-tax profit;
- cash flow;
- revenue;
- expenses;
- earnings before interest, taxes and depreciation;
- economic value added; and
- market share.

Subject to any required action by our stockholders, the number of shares of common stock covered by outstanding awards, the number of shares of common stock that have been authorized for issuance under the 2008 Plan, the exercise or purchase price of each outstanding award, the maximum number of shares of common stock that may be granted subject to awards to any participant in a calendar year, and the like, shall be proportionally adjusted by the Administrator in the event of any increase or decrease in the number of issued shares of common stock resulting from certain changes in our capital structure as described in the 2008 Plan.

Effective upon the consummation of a Corporate Transaction (as defined below), all outstanding awards under the 2008 Plan will terminate unless the acquirer assumes or replaces such awards. The Administrator has the authority, exercisable either in advance of any actual or anticipated Corporate Transaction or Change in Control (as defined below) or at the time of an actual Corporate Transaction or Change in Control and exercisable at the time of the grant of an award under the 2008 Plan or any time while an award remains outstanding, to provide for the full or partial automatic vesting and exercisability of one or more outstanding unvested awards under the 2008 Plan and the release from restrictions on transfer and repurchase or forfeiture rights of such awards in connection with a Corporate Transaction or Change in Control, on such terms and conditions as the Administrator may specify. The Administrator also has the authority to condition any such award vesting and exercisability or release from such limitations upon the subsequent termination of the service of the grantee within a specified period following the effective date of the Corporate Transaction or Change in Control. The Administrator may provide that any awards so vested or released from such limitations in connection with a Change in Control, shall remain fully exercisable until the expiration or sooner termination of the award.

Under our 2008 Plan, a Corporate Transaction is generally defined as:

- an acquisition of securities possessing more than fifty percent (50%) of the total combined voting power of our outstanding securities but excluding any such transaction or series of related transactions that the Administrator determines shall not be a Corporate Transaction;
- a reverse merger in which we remain the surviving entity but: (i) the shares of common stock outstanding immediately prior to such merger are converted or exchanged by virtue of the merger into other property, whether in the form of securities, cash or otherwise; or (ii) in which securities possessing more than fifty percent (50%) of the total combined voting power of our outstanding securities are transferred to a person or persons different from those who held such securities immediately prior to such merger;
- a sale, transfer or other disposition of all or substantially all of the assets of our Corporation;
- a merger or consolidation in which our Corporation is not the surviving entity; or
- a complete liquidation or dissolution.

Under our 2008 Plan, a Change in Control is generally defined as: (i) the acquisition of more than 50% of the total combined voting power of our stock by any individual or entity which a majority of our Board of Directors (who have served on our board for at least 12 months) do not recommend our shareholders accept; (ii) or a change in the composition of our Board of Directors over a period of 12 months or less.

Unless terminated sooner, our 2008 Plan will automatically terminate in 2017. Our Board of Directors may at any time amend, suspend or terminate our 2008 Plan. To the extent necessary to comply with applicable provisions of U.S. federal securities laws, state corporate and securities laws, the Internal Revenue Code, the rules of any applicable stock exchange or national market system, and the rules of any non-U.S. jurisdiction applicable to awards granted to residents therein, we shall obtain shareholder approval of any such amendment to the 2008 Stock Plan in such a manner and to such a degree as required.

As of March 31, 2014, we have options to purchase an aggregate of 3,964,800 restricted shares of common stock outstanding under our 2008 Plan.



### ***1999 Stock Incentive Plan***

VistaGen California's Board of Directors adopted the 1999 Plan on December 6, 1999. The 1999 Plan terminated under its own terms in December 2009, and as a result, no awards may currently be granted under the 1999 Plan. However, the options and awards that have been granted pursuant to the 1999 Plan prior to its expiration remain operative.

The 1999 Plan permitted VistaGen California to make grants of incentive stock options, non-qualified stock options and restricted stock awards. VistaGen California initially reserved 450,000 restricted shares of its common stock for the issuance of awards under the 1999 Plan, which number was subject to adjustment in the event of a stock split, stock dividend or other change in capitalization. Prior to the 1999 Plan's expiration, shares that were forfeited or cancelled from awards under the 1999 Plan were generally available for future awards.

The 1999 Plan could be administered by either VistaGen California's Board of Directors or a committee designated by its Board of Directors. VistaGen California's Board of Directors designated its Compensation Committee as the committee with full power and authority to select the participants to whom awards were granted, to make any combination of awards to participants, to accelerate the exercisability or vesting of any award and to determine the specific terms and conditions of each award, subject to the provisions of the 1999 Plan. All directors, executive officers, and certain other key persons (including employees, consultants and advisors) of VistaGen California were eligible to participate in the 1999 Plan.

The exercise price of incentive stock options awarded under the 1999 Plan could not be less than the fair market value of the common stock on the date of the option grant and could not be less than 110% of the fair market value of the common stock to persons owning stock representing more than 10% of the voting power of all classes of our stock. The exercise price of non-qualified stock options could not be less than 85% of the fair market value of the common stock. The term of each option granted under the 1999 Plan could not exceed ten years (or five years, in the case of an incentive stock option granted to a 10% shareholder) from the date of grant. VistaGen California's Compensation Committee determined at what time or times each option might be exercised (provided that in no event could it exceed ten years from the date of grant) and, subject to the provisions of the 1999 Plan, the period of time, if any, after retirement, death, disability or other termination of employment during which options could be exercised.

The 1999 Plan also permitted the issuance of restricted stock awards. Restricted stock awards issued by VistaGen California were shares of common stock that vest in accordance with terms and conditions established by VistaGen California's Compensation Committee. The Compensation Committee could impose conditions to vesting that it determined to be appropriate. Shares of restricted stock that did not vest were subject to our right of repurchase or forfeiture. VistaGen California's Compensation Committee determined the number of shares of restricted stock granted to any employee. Our 1999 Plan also gave VistaGen California's Compensation Committee discretion to grant stock awards free of any restrictions.

Unless the Compensation Committee provided otherwise, the 1999 Plan did not generally allow for the transfer of incentive stock options and other awards and only the recipient of an award could exercise an award during his or her lifetime. Non-qualified stock options were transferable only to the extent provided in the award agreement, in a manner consistent with the applicable law, and by will and by the laws of descent and distribution. In the event of a change in control of the Company, as defined in the 1999 Plan, the outstanding options will automatically vest unless our Board of Directors and the Board of Directors of the surviving or acquiring entity make appropriate provisions for the continuation or assumption of any outstanding awards under the 1999 Plan.

As of March 31, 2014, we have options outstanding under the 1999 Plan to purchase an aggregate of 284,471 restricted shares of our common stock.

### Item 13. Certain Relationships and Related Transactions, and Director Independence

#### *Sales of Securities to Cato Holding Company*

Cato Holding Company (CHC), doing business as Cato BioVentures (CBV), the parent of Cato Research Ltd. (CRL), is one of our largest institutional stockholders at March 31, 2014, holding common stock and warrants to purchase common stock. Prior to the May 11, 2011 conversion of certain of VistaGen California's outstanding promissory notes and the exchange of its preferred stock into shares of common stock in connection with the Merger, CBV held various promissory notes and a majority of VistaGen California's Series B-1 Preferred Stock. Shawn Singh, our Chief Executive Officer and member of our Board of Directors, served as Managing Principal of CBV and as an officer of CRL until August 2009. In April 2011, CBV loaned us \$352,300 under the terms of a Promissory Note (2011 CHC Note). On October 10, 2012, we agreed with CHC to cancel the 2011 CHC Note and exchange it for a new unsecured promissory note in the principal amount of \$310,400 (2012 CHC Note) and a five-year warrant to purchase 250,000 restricted shares of our common stock at a price of \$1.50 per share (CHC Warrant). Additionally, on October 10, 2012, we issued to CRL: (i) an unsecured promissory note in the initial principal amount of \$1,009,000, which is payable solely in restricted shares of our common stock and which accrues interest at the rate of 7.5% per annum, compounded monthly (CRL Note), as payment in full for all contract research and development services and regulatory advice rendered by CRL to us through December 31, 2012 with respect to the preclinical and clinical development of AV-101, and (ii) a five-year warrant to purchase, at a price of \$1.00 per share, 1,009,000 restricted shares of our common stock. Total interest expense on notes payable to CHC and CRL was \$167,900 and \$101,700 for the fiscal years ended March 31, 2014 and 2013.

#### *Contract Research and Development Agreement with Cato Research Ltd.*

During fiscal year 2007, we entered into a contract research organization arrangement with CRL related to the development of AV-101, under which we incurred expenses of \$52,500 and \$703,800 for the fiscal years ended March 31, 2014 and 2013, respectively, with a substantial portion of the fiscal year 2013 expense reimbursed under the NIH grant.

#### *Note Receivable from Shawn K. Singh, JD and Advances to us by Mr. Singh*

Upon the approval of the Board of Directors, in December 2006, VistaGen California accepted a full-recourse promissory note in the amount of \$103,400 from Mr. Singh in payment of the exercise price for options and warrants to purchase an aggregate of 126,389 restricted shares of VistaGen California's common stock. The note accrued interest at a rate of 4.90% per annum and was due and payable no later than the earlier of (i) December 1, 2016 or (ii) ten days prior to our becoming subject to the requirements of the Exchange Act. On May 11, 2011, in connection with the Merger, the \$128,200 outstanding balance of principal and accrued interest on this note was cancelled in accordance with Mr. Singh's employment agreement and recorded as additional compensation. In accordance with his employment agreement, Mr. Singh is also entitled to receive an income tax gross-up on the compensation related to the note cancellation. At March 31, 2014 and 2013, we had accrued \$101,900 as an estimate of the gross-up amount payable to Mr. Singh, but we had not yet paid it to Mr. Singh.

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Between September and December 2013, Mr. Singh provided short-term cash advances aggregating \$64,000 to meet our short-term working capital requirements. In lieu of cash repayment of the advances, in December 2013, Mr. Singh elected to invest \$50,000 of the balance due him in the 2013 Unit Private Placement. At March 31, 2014, we have partially repaid Mr. Singh the remaining balance of the advances.

**Item 14. Principal Accounting Fees and Services.**

***Fees and Services***

OUM & Co. LLP (*OUM*) served as our independent registered public accounting firm for the fiscal years ended March 31, 2014 and March 31, 2013. Information provided below includes fees for professional services provided to us by OUM for the fiscal years ended March 31, 2014 and 2013.

|                    | Fiscal Years Ended March 31, |                   |
|--------------------|------------------------------|-------------------|
|                    | 2014                         | 2013              |
| Audit fees         | \$ 172,500                   | \$ 167,500        |
| Audit-related fees | 4,600                        | -                 |
| Tax fees           | 12,643                       | 18,747            |
| All other fees     | -                            | -                 |
| Total fees         | <u>\$ 189,743</u>            | <u>\$ 186,247</u> |

*Audit Fees:*

Audit fees include fees billed for the annual audit of the Company's financial statements and quarterly reviews for the fiscal years ended March 31, 2014 and 2013, and for services normally provided by OUM in connection with routine statutory and regulatory filings or engagements.

*Audit-Related Fees:*

Audit-related fees includes fees billed for assurance and related services that are reasonably related to the performance of the annual audit or reviews of the Company's financial statements and are not reported under "Audit Fees." During the fiscal years ended March 31, 2014 or 2013, no such fees were billed by OUM.

*Tax Fees:*

Tax fees include fees for professional services for tax compliance, tax advice and tax planning for the tax years ended March 31, 2014 and 2013.

*All Other Fees:*

All other fees include fees for products and services other than those described above. During the fiscal years ended March 31, 2014 and 2013, no such fees were billed by OUM.

**Pre-Approval of Audit and Non-Audit Services**

All auditing services and non-audit services provided to us by our independent registered public accounting firm are required to be pre-approved by the Audit Committee. OUM did not provide any audit-related or other services in fiscal 2014 and 2013. The pre-approval of non-audit services to be provided by OUM includes making a determination that the provision of the services is compatible with maintaining the independence of OUM as an independent registered public accounting firm and would be approved in accordance with SEC rules for maintaining auditor independence. None of the fees outlined above were approved using the "de minimis exception" under SEC rules.

**Report of the Audit Committee of the Board of Directors**

The Audit Committee has reviewed and discussed with management and OUM & Co. LLP (OUM), our independent registered public accounting firm, the audited consolidated financial statements in the VistaGen Therapeutics, Inc. Annual Report on Form 10-K for the year ended March 31, 2014. The Audit Committee has also discussed with OUM those matters required to be discussed by Public Company Accounting Oversight Board Auditing Standard No. 16.

OUM also provided the Audit Committee with the written disclosures and the letter required by the applicable requirements of the PCAOB regarding the independent auditor's communication with the Audit Committee concerning independence. The Audit Committee has discussed with the registered public accounting firm their independence from our company.

Based on its discussions with management and the registered public accounting firm, and its review of the representations and information provided by management and the registered public accounting firm, including as set forth above, the Audit Committee recommended to our board of directors that the audited financial statements be included in our Annual Report on Form 10-K for the year ended March 31, 2014.

Respectfully Submitted by:

MEMBERS OF THE AUDIT COMMITTEE  
Jon S. Saxe, Audit Committee Chairman  
Brian J. Underdown

Dated: June 23, 2014

The information contained above under the caption "Report of the Audit Committee of the Board of Directors" shall not be deemed to be soliciting material or to be filed with the SEC, nor shall such information be incorporated by reference into any future filing under the Securities Act or the Exchange Act, except to the extent that we specifically incorporate it by reference into such filing.

## PART IV

## Item 15. Exhibits, Financial Statement Schedules

## (a)(1) Financial Statements

See Index to Financial Statements under Item 8 on page 67.

## (a)(2) Consolidated Financial Statement Schedules

Consolidated financial statement schedules are omitted because they are not applicable or are not required or the information required to be set forth therein is included in the Consolidated Financial Statements or notes thereto.

## (a)(3) Exhibits

The exhibits listed in the Exhibit Index below are filed or incorporated by reference as part of this report.

## Exhibit Index

| Exhibit No. | Description*   |
|-------------|--|
| 2.1 *       | Agreement and Plan of Merger by and among Excaliber Enterprises, Ltd., VistaGen Therapeutics, Inc. and Excaliber Merger Subsidiary, Inc.   |
| 3.1 *       | Articles of Incorporation, dated October 6, 2005.  |
| 3.2         | Certificate of Amendment filed with the Nevada Secretary of State on December 6, 2011, incorporated by reference from Exhibit 3.3 to the Company's Annual Report on Form 10-K, filed July 2, 2012.   |
| 3.3         | Amended and Restated Bylaws as of February 5, 2014, incorporated by reference from the Company's Report on Form 8-K filed on February 7, 2014.   |
| 3.4         | Bylaws in effect as of May 11, 2011, incorporated by reference from the document filed as Exhibit 3.2 in the Company's Current Report on Form 8-K filed on May 16, 2011.   |
| 3.5         | Articles of Merger filed with the Nevada Secretary of State on May 24, 2011, incorporated by reference from Exhibit 3.1 to the Company's Current Report on Form 8-K filed on May 31, 2011.   |
| 3.6         | Certificate of Designations Series A Preferred, incorporated by reference from Exhibit 3.1 to the Company's Current Report on Form 8-K filed on December 23, 2011.   |
| 10.1 *      | VistaGen's 1999 Stock Incentive Plan.  |
| 10.2 *      | Form of Option Agreement under VistaGen's 1999 Stock Incentive Plan.   |
| 10.5 *      | VistaGen's 2008 Stock Incentive Plan.  |
| 10.6 *      | Form of Option Agreement under VistaGen's 2008 Stock Incentive Plan.   |
| 10.20 *     | Strategic Development Services Agreement, dated February 26, 2007, by and between VistaGen and Cato Research Ltd.  |
| 10.21 *     | License Agreement by and between National Jewish Medical and Research Center and VistaGen, dated July 12, 1999, as amended by that certain Amendment to License Agreement dated January 25, 2001, as amended by that certain Second Amendment to License Agreement dated November 6, 2002, as amended by that certain Third Amendment to License Agreement dated March 1, 2003, and as amended by that certain Fourth Amendment to License Agreement dated April 15, 2010. |
| 10.22 *     | License Agreement by and between Mount Sinai School of Medicine of New York University and the Company, dated October 1, 2004.   |
| 10.23 *     | Non-Exclusive License Agreement, dated December 5, 2008, by and between VistaGen and Wisconsin Alumni Research Foundation, as amended by that certain Wisconsin Materials Addendum, dated February 2, 2009.  |
| 10.24 *     | Sponsored Research Collaboration Agreement, dated September 18, 2007, between VistaGen and University Health Network, as amended by that certain Amendment No. 1 and Amendment No. 2, dated April 19, 2010 and December 15, 2010, respectively.  |
| 10.26 *     | License Agreement, dated October 24, 2001, by and between the University of Maryland, Baltimore, Cornell Research Foundation and Artemis Neuroscience, Inc.  |
| 10.27 *     | Non-exclusive License Agreement, dated September 1, 2010, by and between VistaGen and TET Systems GmbH & Co. KG.   |
| 10.31 *     | Unsecured Promissory Note dated April 28, 2011 issued by VistaGen to Desjardins Securities.  |
| 10.32 *     | Unsecured Promissory Note dated April 28, 2011 issued by VistaGen to McCarthy Tetrault LLP.  |
| 10.34 *     | Promissory Note dated February 25, 2010 issued by VistaGen to The Regents of the University of California.   |

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| 10.40 * | Employment Agreement, by and between, VistaGen and Shawn K. Singh, dated April 28, 2010, as amended May 9, 2011.   |
| 10.41 * | Employment Agreement, by and between, VistaGen and H. Ralph Snodgrass, PhD, dated April 28, 2010, as amended May 9, 2011.  |
| 10.46   | Notice of Award by National Institutes of Health, Small Business Innovation Research Program, to VistaGen Therapeutics, Inc. for project, Clinical Development of 4-CI-KYN to Treat Pain dated June 22, 2009, with revisions dated July 19, 2010 and August 9, 2011, incorporated by reference from Exhibit 10.46 to the Company's Current Report on Form 8-K/A filed on December 20, 2011.    |
| 10.47   | Notice of Grant Award by California Institute of Regenerative Medicine and VistaGen Therapeutics, Inc. for Project: Development of an hES Cell-Based Assay System for Hepatocyte Differentiation Studies and Predictive Toxicology Drug Screening, dated April 1, 2009, incorporated by reference from Exhibit 10.47 to the Company's Current Report on Form 8-K/A filed on December 20, 2011. |
| 10.48   | Amendment No. 4, dated October 24, 2011, to Sponsored Research Collaboration Agreement between VistaGen and University Health Network, incorporated by reference from Exhibit 10.2 to the Company's Current Report on Form 8-K filed on November 30, 2011.   |
| 10.49   | License Agreement No. 1, dated as of October 24, 2011 between University Health Network and VistaGen Therapeutics, Inc., incorporated by reference from Exhibit 10.1 to the Company's Current Report on Form 8-K filed on November 30, 2011.   |
| 10.50   | Strategic Medicinal Chemistry Services Agreement, dated as of December 6, 2011, between Synteris, Inc. and VistaGen Therapeutics, Inc., incorporated by reference from Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 7, 2011.   |
| 10.51   | Common Stock Exchange Agreement, dated as of December 22, 2011 between Platinum Long Term Growth VII, LLC and VistaGen Therapeutics, Inc., incorporated by reference from Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 23, 2011.   |
| 10.52   | Note and Warrant Exchange Agreement, dated as of December 28, 2011 between Platinum Long Term Growth VII, LLC and VistaGen Therapeutics, Inc., incorporated by reference from Exhibit 10.1 to the Current Report on Form 8-K filed on January 4, 2012.   |
| 10.55   | Form of Warrant to Purchase Common Stock, dated as of February 28, 2012, incorporated by reference from Exhibit 10.3 to the Company's Current Report on Form 8-K filed on March 2, 2012.   |
| 10.57   | License Agreement No. 2, dated as of March 19, 2012 between University Health Network and VistaGen Therapeutics, Inc., incorporated by reference from Exhibit 10.57 to the Company's Annual Report on Form 10-K filed on July 2, 2012.   |
| 10.58   | Exchange Agreement dated as of June 29, 2012 between Platinum Long Term Growth VII, LLC and VistaGen Therapeutics, Inc., incorporated by reference from Exhibit 10.58 to the Company's Annual Report on Form 10-K filed on July 2, 2012.   |
| 10.63   | Unsecured Promissory Note in the face amount of \$1,000,000 issued to Morrison & Foerster LLP on August 31, 2012 (Replacement Note A), incorporated by reference from Exhibit 10.3 to the Company's Current Report on Form 8-K filed on September 6, 2012.   |
| 10.64   | Unsecured Promissory Note in the face amount of \$1,379,376 issued to Morrison & Foerster LLP on August 31, 2012 (Replacement Note B), incorporated by reference from Exhibit 10.4 to the Company's Current Report on Form 8-K filed on September 6, 2012.   |
| 10.65   | Stock Purchase Warrant issued to Morrison & Foerster LLP on August 31, 2012 to purchase 1,379,376 shares of the Company's common stock (New Morrison & Foerster Warrant), incorporated by reference from Exhibit 10.5 to the Company's Current Report on Form 8-K filed on September 6, 2012.  |
| 10.66   | Warrant to Purchase Common Stock issued to Morrison & Foerster LLP on August 31, 2012 to purchase 425,000 shares of the Company's common stock (Amended Morrison & Foerster Warrant), incorporated by reference from Exhibit 10.6 to the Company's Current Report on Form 8-K filed on September 6, 2012.  |
| 10.67   | Note Exchange and Purchase Agreement dated as of October 11, 2012 by and between VistaGen Therapeutics, Inc. and Platinum Long Term Growth VII, LLP, incorporated by reference from Exhibit 10.1 to the Company's Current Report on Form 8-K filed on October 16, 2012.  |
| 10.68   | Form of Senior Secured Convertible Promissory Note issued to Platinum Long Term Growth VII, LLP under the Note Exchange and Purchase Agreement, incorporated by reference from Exhibit 10.2 to the Company's Current Report on Form 8-K filed on October 16, 2012.   |
| 10.69   | Form of Warrant to Purchase Shares of Common Stock issued to Platinum Long Term Growth VII, LLP under the Note Exchange and Purchase Agreement, incorporated by reference from Exhibit 10.3 to the Company's Current Report on Form 8-K filed on October 16, 2012.   |

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| 10.70 | Amended and Restated Security Agreement as of October 11, 2012 between VistaGen Therapeutics, Inc. and Platinum Long Term Growth VII, LLP, incorporated by reference from Exhibit 10.4 to the Company's Current Report on Form 8-K filed on October 16, 2012.                    |
| 10.71 | Intellectual Property Security and Stock Pledge Agreement as of October 11, 2012 between VistaGen California and Platinum Long Term Growth VII, LLP, incorporated by reference from Exhibit 10.5 to the Company's Current Report on Form 8-K filed on October 16, 2012.          |
| 10.72 | Negative Covenant Agreement dated October 11, 2012 between VistaGen California, Artemis Neuroscience, Inc. and Platinum Long Term Growth VII, LLP, incorporated by reference from Exhibit 10.6 to the Company's Current Report on Form 8-K filed on October 16, 2012.            |
| 10.73 | Amendment to Note Exchange and Purchase Agreement as of November 14, 2012 between VistaGen Therapeutics Inc. and Platinum Long Term Growth VII, LLP, incorporated by reference from Exhibit 10.1 to the Company's Current Report on Form 8-K filed on November 20, 2012.         |
| 10.75 | Amendment No. 2 to Note Exchange and Purchase Agreement as of January 31, 2013 between VistaGen Therapeutics Inc. and Platinum Long Term Growth VII, LLP, incorporated by reference from Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on February 14, 2013. |
| 10.76 | Amendment No. 3 to Note Exchange and Purchase Agreement as of February 22, 2013 between VistaGen Therapeutics Inc. and Platinum Long Term Growth VII, LLP, incorporated by reference from Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 28, 2013.   |
| 10.77 | Form of Warrant to Purchase Common Stock issued to independent members of the Company's Board of Directors and its executive officers on March 3, 2013, incorporated by reference from Exhibit 10.1 to the Company's Current Report on Form 8-K filed on March 6, 2013.          |
| 10.78 | Securities Purchase Agreement between VistaGen Therapeutics, Inc., and Autilion AG dated April 8, 2013, incorporated by reference from Exhibit 10.1 to the Company's Current Report on Form 8-K filed on April 10, 2013.   |
| 10.79 | Voting Agreement between VistaGen Therapeutics, Inc., and Autilion AG dated April 8, 2013, incorporated by reference from Exhibit 10.2 to the Company's Current Report on Form 8-K filed on April 10, 2013.  |
| 10.80 | Note Conversion Agreement as of April 4, 2013 between VistaGen Therapeutics Inc. and Platinum Long Term Growth VII, LLP, incorporated by reference from Exhibit 10.3 to the Company's Current Report on Form 8-K filed on April 10, 2013.  |
| 10.81 | Assignment and Assumption Agreement between Autilion AG and Bergamo Acquisition Corp. PTE LTD dated April 12, 2013, incorporated by reference from Exhibit 10.81 to the Company's Annual Report on Form 10-K filed July 18, 2013.  |
| 10.82 | Amendment No. 1 to Securities Purchase Agreement dated April 30, 2013 between VistaGen Therapeutics, Inc. and Bergamo Acquisition Corp. PTE LTD, incorporated by reference from Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 1, 2013.                   |
| 10.83 | Lease between Bayside Area Development, LLC and VistaGen Therapeutics, Inc. (California) dated April 24, 2013, incorporated by reference from Exhibit 10.83 to the Company's Annual Report on Form 10-K filed July 18, 2013.   |
| 10.84 | Indemnification Agreement effective May 20, 2013 between the Company and Jon S. Saxe, incorporated by reference from Exhibit 10.84 to the Company's Annual Report on Form 10-K filed on July 18, 2013.   |
| 10.85 | Indemnification Agreement effective May 20, 2013 between the Company and Shawn K. Singh, incorporated by reference from Exhibit 10.85 to the Company's Annual Report on Form 10-K filed on July 18, 2013.  |
| 10.86 | Indemnification Agreement effective May 20, 2013 between the Company and H. Ralph Snodgrass, incorporated by reference from Exhibit 10.86 to the Company's Annual Report on Form 10-K filed on July 18, 2013.  |
| 10.87 | Indemnification Agreement effective May 20, 2013 between the Company and Brian J. Underdown, incorporated by reference from Exhibit 10.87 to the Company's Annual Report on Form 10-K filed on July 18, 2013.  |
| 10.88 | Indemnification Agreement effective May 20, 2013 between the Company and Jerrold D. Dotson, incorporated by reference from Exhibit 10.88 to the Company's Annual Report on Form 10-K filed on July 18, 2013.   |
| 10.89 | Amendment and Waiver effective May 24, 2013 between the Company and Platinum Long Term Growth VII, LLC, incorporated by reference from Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 3, 2013.   |

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|         |  |
|---------|--|
| 10.90   | Amendment No 2 to Securities Purchase Agreement dated June 27, 2013 between the Company, Autilion AG and Bergamo Acquisition Corp. PTE LTD, incorporated by reference from Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 28, 2013.      |
| 10.91   | Senior Secured Convertible Promissory Note, dated July 26, 2013 issued to Platinum Long Term Growth VII, LLP, incorporated by reference from Exhibit 10.1 to the Company's Current Report on Form 8-K filed on August 2, 2013.                                   |
| 10.92   | Common Stock Warrant, dated July 26, 2013 issued to Platinum Long Term Growth VII, LLP, incorporated by reference from Exhibit 10.2 to the Company's Current Report on Form 8-K filed on August 2, 2013.   |
| 10.93   | Form of Subscription Agreement between the Company and investors in the Fall 2013 Unit Private Placement.  |
| 10.94   | Form of Convertible Promissory Note between the Company and investors in the Fall 2013 Unit Private Placement.   |
| 10.95   | Form of Common Stock Purchase Warrant between the Company and investors in the Fall 2013 Unit Private Placement.   |
| 10.96   | Form of Amendment to Convertible Promissory Note and Warrant between the Company and investors in the Fall 2013 Unit Private Placement, effective May 31, 2014.  |
| 10.97   | Form of Unit Subscription Agreement between the Company and investors in the Spring 2014 Unit Private Placement dated April 1, 2014, incorporated by reference from Exhibit 10.1 to the Company's Current Report on Form 8-K filed on April 8, 2014.             |
| 10.98   | Form of Subordinate Convertible Promissory Note between the Company and investors in the Spring 2014 Unit Private Placement dated April 1, 2014, incorporated by reference from Exhibit 10.2 to the Company's Current Report on Form 8-K filed on April 8, 2014. |
| 10.99   | Form of Common Stock Purchase Warrant between the Company and investors in the Spring 2014 Unit Private Placement dated April 1, 2014, incorporated by reference from Exhibit 10.3 to the Company's Current Report on Form 8-K filed on April 8, 2014.           |
| 10.100  | Common Stock Purchase Warrant between the Company and Platinum Long Term Growth Fund VII dated May 14, 2014, incorporated by reference from Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 19, 2014.                                      |
| 10.101  | Subordinate Convertible Promissory Note between the Company and Platinum Long Term Growth Fund VII dated May 14, 2014, incorporated by reference from Exhibit 10.2 to the Company's Current Report on Form 8-K filed on May 19, 2014.                            |
| 10.102  | Form of Promissory Note and Form of Warrant issued by the Company to Icahn School of Business at Mount Sinai effective April 10, 2014 in satisfaction of technology license maintenance fees and reimbursable patent costs.                                      |
| 10.103  | Amendment No. 3 to Sponsored Research Collaboration Agreement, dated April 25, 2011, by and between VistaGen and University Health Network.  |
| 10.104  | Amendment No. 5 to Sponsored Research Collaboration Agreement, dated October 10, 2012, by and between VistaGen and University Health Network.  |
| 21.1*   | List of Subsidiaries.  |
| 24.1    | Power of Attorney  |
| 31.1    | Certification of the Company's Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002   |
| 31.2    | Certification of the Company's Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.  |
| 32.1    | Certification of the Company's Chief Executive Officer and Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.  |
| 101.INS | XBRL Instance Document   |
| 101.SCH | XBRL Taxonomy Schema   |
| 101.CAL | XBRL Taxonomy Extension Calculation Linkbase   |
| 101.DEF | XBRL Taxonomy Extension Definition Linkbase  |
| 101.LAB | XBRL Taxonomy Extension Label Linkbase   |
| 101.PRE | XBRL Taxonomy Extension Presentation Linkbase  |

\* Incorporated by reference from the like-numbered exhibit filed with our Current Report on Form 8-K on May 16, 2011.



**SIGNATURES**

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of South San Francisco, State of California, on the 24th day of June, 2014.

**VistaGen Therapeutics, Inc.**

By: \_\_\_\_\_ */s/ Shawn K. Singh*  
**Shawn K. Singh, J.D.**  
*Chief Executive Officer*

**POWER OF ATTORNEY**

**KNOW ALL PERSONS BY THESE PRESENTS**, that each person whose signature appears below constitutes and appoints each of Shawn K. Singh, J.D. and Jerrold D. Dotson his true and lawful attorney-in-fact and agent, with full power of substitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments to this annual report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

IN WITNESS WHEREOF, each of the undersigned has executed this Power of Attorney as of the date indicated opposite his name.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

| <u>Signature</u>   | <u>Title</u>  | <u>Date</u>   |
|--|---|---------------|
| <u><i>/s/ Shawn K. Singh</i></u><br><b>Shawn K. Singh, JD</b>            | Chief Executive Officer, and Director<br><i>(Principal Executive Officer)</i>                     | June 24, 2014 |
| <u><i>/s/ Jerrold D. Dotson</i></u><br><b>Jerrold D. Dotson</b>          | Vice President and Chief Financial Officer<br><i>(Principal Financial and Accounting Officer)</i> | June 24, 2014 |
| <u><i>/s/ H. Ralph Snodgrass</i></u><br><b>H. Ralph Snodgrass, Ph.D</b>  | President, Chief Scientific Officer and Director  | June 24, 2014 |
| <u><i>/s/ Jon S. Saxe</i></u><br><b>Jon S. Saxe</b>                      | Chairman of the Board of Directors  | June 24, 2014 |
| <u><i>/s/ Brian J. Underdown</i></u><br><b>Brian J. Underdown, Ph. D</b> | Director  | June 24, 2014 |

## SUBSCRIPTION AGREEMENT UNITS

TO: VistaGen Therapeutics, Inc., a Nevada corporation, (the “Corporation”)  
RE: Purchase of Units of VistaGen Therapeutics, Inc.

**Instructions:** Complete and sign this Subscription Agreement. Please be sure to initial the appropriate “accredited investor” category in Box C.

A completed and originally executed copy of, and the other documents required to be delivered with, this Subscription Agreement, must be delivered to the following address:

Shawn K. Singh, JD  
Chief Executive Officer  
VistaGen Therapeutics, Inc.  
343 Allerton Avenue  
South San Francisco, CA 94080  
(650) 627-3483  
[ssingh@vistagen.com](mailto:ssingh@vistagen.com)

1. The undersigned (the “Subscriber”) hereby irrevocably subscribes for and agrees to purchase from the Corporation the number of units of the Corporation (“Units”) at the price and for the aggregate consideration set forth in Box A of Section 6 below (the “Subscription Price”). Each Unit will consist of (i) an unsecured convertible promissory note (a “Note”) in the face amount of \$5,000 bearing interest at a rate of ten percent (10.0%) per annum and maturing on July 30, 2014; (ii) TEN THOUSAND (10,000) shares of unregistered Common Stock of the Corporation (the “Shares”) and (iii) a warrant to purchase TEN THOUSAND (10,000) shares of Common Stock of the Corporation at a price of \$1.00 per share through July 30, 2016 (each warrant to purchase shares of Common Stock, a “Warrant”). The Subscription Price for each Unit shall be \$5,000. The Subscriber acknowledges that this Subscription Agreement is subject to acceptance by the Corporation. The Corporation may also accept this Subscription Agreement in part. The Subscriber agrees that if this Subscription Agreement is not accepted in full, any funds related to the portion of this Subscription Agreement not accepted will be returned to the undersigned, without interest.

2. By executing this Subscription Agreement, the Subscriber represents, warrants and covenants (on its own behalf and, if applicable, on behalf of each beneficial purchaser for whom it is contracting hereunder) to the Corporation (and acknowledges that the Corporation is relying thereon) that:

(a) it is authorized to consummate the purchase of the Units;

(b) it understands that the Note, the Shares, the Warrants and the Shares issuable upon conversion of the Note or exercise of the Warrants (collectively, the “Securities”) have not been and will not be registered under the Securities Act of 1933 (the “Securities Act”), or any applicable state securities laws, and that the offer and sale of the Note, the Shares and Warrants to it is being made in reliance on a private placement exemption available under Section 4(2) of the Securities Act and Rule 506 of Regulation D under the Securities Act (“Regulation D”) to accredited investors (“Accredited Investors”), as defined in Rule 501(a) of Regulation D;

(c) it has such knowledge and experience in financial and business matters as to be capable of evaluating the merits and risks of its investment in the Units and is able to bear the economic risks of, and withstand the complete loss of, such investment;

(d) it is an Accredited Investor acquiring the Units for its own account or, if the Units are to be purchased for one or more accounts (“Investor Accounts”) with respect to whom it is exercising sole investment discretion, each such investor account is an Accredited Investor on a like basis. In each case, the undersigned has completed Box C of Section 6 to indicate under which category of Rule 501(a) the investor qualifies as an Accredited Investor;

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(e) it is not acquiring the Units with a view to any resale, distribution or other disposition of the Units in violation of federal or applicable state securities laws, and, in particular, it has no intention to distribute either directly or indirectly any of the Units in the U.S. or to U.S. persons; provided, however, that the holder may sell or otherwise dispose of any of the Units pursuant to registration thereof under the Securities Act and any applicable state securities laws or pursuant to an exemption from such registration requirements;

(f) in the case of the purchase by the Subscriber of the Units as agent or trustee for any other person, the Subscriber has due and proper authority to act as agent or trustee for and on behalf of such beneficial purchaser in connection with the transactions contemplated hereby;

(g) it is not purchasing the Units as a result of any general solicitation or general advertising (as those terms are used in Regulation D under the Securities Act), including advertisements, articles, notices or other communications published in any newspaper, magazine or similar media or broadcast over radio or television, or any seminar or meeting whose attendees have been invited by general solicitation or general advertising;

(h) it understands that the Securities are “restricted securities” as defined in Rule 144(a)(3) under the Securities Act and agrees that if it decides to offer, sell or otherwise transfer the Securities, such Securities may be offered, sold or otherwise transferred only (A) to the Corporation, (B) outside the U.S. in accordance with Rule 904 of Regulation S under the Securities Act, (C) within the U.S. or to or for the account or benefit of a U.S. Person in accordance with an exemption from the registration requirements of the Securities Act and all applicable state securities laws, (D) in a transaction that does not require registration under the Securities Act or any applicable U.S. state securities laws or (E) pursuant to an effective registration statement under the Securities Act, and in each case in accordance with any applicable state securities laws in the U.S. or securities laws of any other applicable jurisdiction; provided that with respect to sales or transfers under clauses (C) or (D), only if the holder has furnished to the Corporation a written opinion of counsel, reasonably satisfactory to the Corporation, prior to such sale or transfer;

(i) it has been independently advised as to the applicable holding period and resale restrictions with respect to trading imposed in respect of the Securities, by securities legislation in the jurisdiction in which it resides or to which it is otherwise subject, and confirms that no representation has been made respecting the applicable holding periods for the Securities and is aware of the risks and other characteristics of the Securities and of the fact that the undersigned may not be able to resell the Securities except in accordance with applicable securities legislation and regulations;

(j) no person has made to the Subscriber any written or oral representations:

- (i) that any person will resell or repurchase any of the Securities;
- (ii) that any person will refund the purchase price of the Securities; or
- (iii) as to the future price or value of any of the Securities;

(k) it understands and acknowledges that certificates representing the Note, the Shares and the Warrants shall bear the following legend:

**“THE SECURITIES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE U.S. SECURITIES ACT OF 1933, AS AMENDED (THE “SECURITIES ACT”), OR UNDER ANY STATE SECURITIES LAWS. THE HOLDER HEREOF, BY PURCHASING THESE SECURITIES, AGREES FOR THE BENEFIT OF THE CORPORATION, THAT THESE SECURITIES MAY BE OFFERED, SOLD, PLEDGED**

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**OR OTHERWISE TRANSFERRED ONLY (A) TO THE CORPORATION, (B) OUTSIDE THE U.S. IN ACCORDANCE WITH REGULATION S UNDER THE SECURITIES ACT, (C) IN COMPLIANCE WITH AN EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS, (D) IN ANOTHER TRANSACTION THAT DOES NOT REQUIRE REGISTRATION UNDER THE U.S. SECURITIES ACT OR ANY APPLICABLE STATE SECURITIES LAWS, OR (E) PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT, AND, IN THE CASE OF (C) AND (D), THE SELLER FURNISHES TO THE CORPORATION A WRITTEN OPINION OF COUNSEL OF RECOGNIZED STANDING IN FORM AND SUBSTANCE SATISFACTORY TO THE CORPORATION TO SUCH EFFECT.”**

(l) it consents to the Corporation making a notation on its records or giving instructions to any transfer agent of the Shares in order to implement the restrictions on transfer set forth and described herein;

(m) the office or other address of the undersigned at which the undersigned received and accepted the offer to purchase the Units is the address listed in Box B of Section 6 below;

(n) if required by applicable securities laws, regulations, rule or order or by any securities commission, stock exchange or other regulatory authority, it will execute, deliver and file, within the approved time periods, all documentation as may be required thereunder, and otherwise assist the Corporation in filing reports, questionnaires, undertakings and other documents with respect to the issuance of the Units;

(o) this subscription agreement has been duly and validly authorized, executed and delivered by and constitutes a legal, valid, binding and enforceable obligation of the Subscriber; and

(p) it is not an affiliate (as defined in Rule 144 under the Securities Act) of the Corporation and is not acting on behalf of an affiliate of the Corporation.

3. The Subscriber acknowledges that the representations and warranties and agreements contained herein are made by it with the intention that they may be relied upon by the Corporation and its legal counsel in determining its eligibility or, if applicable, the eligibility of others on whose behalf it is contracting hereunder, to purchase the Units. The Subscriber further agrees that by accepting delivery of the Units or by having its agent accept delivery of the Units on its behalf, it shall be representing and warranting that the representations, warranties, acknowledgements and agreements contained herein are true and correct as at the time of accepting delivery of the Units with the same force and effect as if they had been made by the Subscriber at such time and that the representations and warranties shall survive the purchase by the Subscriber of the Units and shall continue in full force and effect notwithstanding any subsequent disposition by the Subscriber of the Units. The Corporation and its directors, officers, employees, shareholders and its legal counsel shall be entitled to rely on the representations and warranties of the Subscriber contained in this subscription agreement, and the Subscriber shall indemnify and hold harmless the Corporation, its legal counsel for any loss, costs or damages any of them may suffer as a result of any misrepresentations or any breach or failure to comply with any agreement herein.

4. The contract arising out of the acceptance of this subscription by the Corporation shall be governed by and construed in accordance with the laws of the State of California and represents the entire agreement of the parties hereto relating to the subject matter hereof.

5. The Corporation shall be entitled to rely on delivery of a facsimile copy of this subscription agreement, and acceptance by the Corporation of a facsimile copy of this subscription agreement shall create a legal, valid and binding agreement among the undersigned and the Corporation in accordance with the terms hereof.

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6. SUBSCRIPTION PARTICULARS

**BOX A**

**Particulars of Purchase of Units**

Number of Units subscribed for: \_\_\_\_\_

Subscription Price (\$5,000 X number of Units) \_\_\_\_\_

**BOX B**

**Subscriber Information**

|                    |       |
|--------------------|-------|
| Name               | _____ |
| Street Address     | _____ |
| Street Address (2) | _____ |
| City and State     | _____ |
| Zip Code           | _____ |
| Contact Name       | _____ |
| Alternate Contact  | _____ |
| Phone No.          | _____ |
| E-mail Address     | _____ |
|                    | _____ |

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**BOX C**  
**Accredited Investor Status**

The Subscriber represents and warrants that it is an “accredited investor”, as defined in Rule 501(a) under the Securities Act, by virtue of satisfying one or more of the categories indicated below **(please write your initials on the line next to each applicable category)**:

- 0      Category 1.      A bank, as defined in section 3(a)(2) of the Securities Act.
- A savings and loan association or other institution, as defined in section 3(a)(5)(A) of the Securities Act, whether acting in its individual or fiduciary capacity.
- A broker or dealer registered pursuant to section 15 of the Securities Exchange Act of 1934.
- An insurance company as defined in section 2(a)(13) of the Securities Act.
- An investment company registered under the Investment Corporation Act of 1940 or a business development company as defined in section 2(a)(48) of that Act.
- A Small Business Investment Corporation licensed by the U.S. Small Business Administration under section 301(c) or (d) of the Small Business Investment Act of 1958.
- A plan established and maintained by a state, its political subdivisions, or any agency or instrumentality of a state or its political subdivisions, for the benefit of its employees, if such plan has total assets in excess of \$5,000,000.
- An employee benefit plan within the meaning of the Employee Retirement Income Security Act of 1974 if the investment decision is made by a plan fiduciary, as defined in section 3(21) of such Act, which is either a bank, savings and loan association, insurance company, or registered investment adviser, or if the employee benefit plan has total assets in excess of \$5,000,000 or, if a self-directed plan, with investment decisions made solely by persons that are accredited investors.
- 0      Category 2.      Any private business development company as defined in section 202(a)(22) of the Investment Advisers Act of 1940.
- 0      Category 3.      An organization described in Section 501(c)(3) of the Internal Revenue Code, a corporation, a Massachusetts or similar business trust, or a partnership, not formed for the specific purpose of acquiring the Shares, with total assets in excess of \$5,000,000.
- 0      Category 4.      A director or executive officer of the Corporation.
- 0      Category 5.      A natural person whose individual net worth, or joint net worth with that person’s spouse, at the time of this purchase exceeds \$1,000,000, excluding the value of the person’s primary residence, if any.
- 0      Category 6.      A natural person who had an individual income in excess of \$200,000 in each of the two most recent years or joint income with that person’s spouse in excess of \$300,000 in each of those years and has a reasonable expectation of reaching the same income level in the current year.
-

0      Category 7.                    A trust, with total assets in excess of \$5,000,000, not formed for the specific purpose of acquiring the Shares, whose purchase is directed by a sophisticated person as described in Rule 506(b)(2)(ii) of Regulation D under the U.S. Securities Act

0      Category 8.                    An entity in which each of the equity owners is an accredited investor.

7.      A certified check or bank draft in the amount of the Subscription Price as set forth in Box A of Section 6 above, accompanies this Subscription Agreement.

**SIGNATURE OF SUBSCRIBER**

Signature of Subscriber (on its own behalf and, if applicable, on behalf of each person for whom it is contracting hereunder):

\_\_\_\_\_  
(Full Name of Subscriber)

\_\_\_\_\_  
(Authorized Signature)

\_\_\_\_\_  
(Name and Official Capacity – PLEASE PRINT)

**ACCEPTANCE BY CORPORATION**

The Corporation hereby accepts the above subscription as of this \_\_\_ day of October 2013.

**VistaGen Therapeutics, Inc.**

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
Shawn K. Singh, JD, Chief Executive Officer

**THIS CONVERTIBLE PROMISSORY NOTE HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933. NO SALE OR DISPOSITION MAY BE EFFECTED EXCEPT IN COMPLIANCE WITH RULE 144 UNDER SAID ACT OR AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR AN OPINION OF COUNSEL FOR THE HOLDER, SATISFACTORY TO THE COMPANY, THAT SUCH REGISTRATION IS NOT REQUIRED UNDER THE ACT OR RECEIPT OF A NO ACTION LETTER FROM THE SECURITIES AND EXCHANGE COMMISSION.**

**CONVERTIBLE PROMISSORY NOTE**

§ \_\_\_\_\_  
South San Francisco, California

August \_\_, 2013

**FOR VALUE RECEIVED**, VistaGen Therapeutics, Inc., a Nevada corporation (the "*Company*"), promises to pay to the order of \_\_\_\_\_ or its permitted assigns (each a "*Holder*"), the principal sum of \_\_\_\_\_ (\$\_\_\_\_\_) with interest on the outstanding principal amount at the simple rate of 10.0% per annum (computed on the basis of actual calendar days elapsed and a year of 360 days). Interest shall commence with the date hereof and shall accrue on the outstanding principal until converted or paid in accordance with the provisions hereof.

1. This note (the "*Note*") is issued pursuant to the terms of that certain Subscription Agreement dated as of August \_\_, 2013, by and among the Company and the Subscriber (the "*Agreement*"). This Note is one of a series of notes (the "*Notes*") having like tenor and effect (except for variations necessary to express the name of the holders, the principal amount of each of the Notes and the date on which each Note is issued) issued or to be issued by the Company in accordance with the terms of the Agreement.

2. Unless sooner converted in accordance with Section 3, the entire unpaid balance of principal and all unpaid accrued interest shall become fully due and payable on July 30, 2014 ("*Maturity*").

3. (a) Notwithstanding anything to the contrary contained in this Section 3, the Company shall have the right, at the Company's option, upon receipt by the Holder of thirty (30) day's written notice (the "*Prepayment Notice*"), to pay the outstanding principal amount of this Note together with all of the accrued and unpaid interest due and payable hereunder on the date of such payment (the "*Outstanding Balance*") to Holder at any time prior to Maturity. Notwithstanding the receipt of the Prepayment Notice by Holder, the Holder shall have the right and option to exercise its Conversion Option, as defined in Section 3(b) below, during such thirty (30) day period following the receipt of such Prepayment Notice.

(b) Subject to the terms and conditions of this Section 3, and provided this Note remains outstanding and has not otherwise been converted pursuant to this Section 3, the Holder shall have the right, at the Holder's option, to convert the Outstanding Balance (the "*Conversion Option*") into such number of fully paid and non-assessable shares of the Company's unregistered Common Stock (the "*Conversion Shares*") as is determined in accordance with the following formula: (the Outstanding Balance as of the date of the exercise of the Conversion Option) / \$0.50). If the Holder desires to exercise the Conversion Option, the Holder shall, by personal delivery or nationally-recognized overnight carrier, surrender the original of this Note and give written notice to the Company (the "*Conversion Notice*"), which Conversion Notice shall (a) state the Holder's election to exercise the Conversion Option, and (b) provide for a representation and warranty of the Holder to the Company that, as of the date of the Conversion Notice, the Holder has not assigned or otherwise transferred all or any portion of the Holder's rights under this Note to any third parties. The Company shall, as soon as practicable thereafter, issue and deliver to the Holder the number of Conversion Shares to which the Holder shall be entitled upon exercise of the Conversion Option. Notwithstanding anything to the contrary contained in this Section 3(b), the Company shall have the right, at the Company's option, to pay all or a portion of the accrued and unpaid interest due and payable to Holder upon Holder's exercise of the Conversion Option in cash.



4. Upon conversion of this Note into the Conversion Shares, the Holder shall surrender this Note, duly endorsed, at the principal office of the Company. At its expense, the Company shall, as soon as practicable thereafter, issue and deliver to the Holder at such principal office a certificate or certificates for the Conversion Shares into which the Note is converted (bearing such legends as may be required or advisable in the opinion of counsel to the Company), together with a check payable to the Holder for any cash amounts payable as described in Section 5 below.

5. No fractional shares shall be issued upon conversion of this Note. In lieu of the Company issuing any fractional shares to the Holder upon the conversion of this Note, the Company shall pay to the Holder an amount in cash equal to the product obtained by multiplying the conversion price applied to effect such conversion by the fraction of a share not issued pursuant to the previous sentence. Upon conversion of this Note in full and the payment of the amounts specified in this Note, the Company shall be released from all its obligations and liabilities under this Note.

6. The terms of this Note shall be construed in accordance with and governed by the laws of the State of California, as applied to contracts entered into by California residents within the State of California, which contracts are to be performed entirely within the State of California.

7. Any term of this Note and all Notes issued pursuant to the Agreement may be waived (either generally or in a particular instance and either retroactively or prospectively), only with the written consent of Company and the holders of Notes representing at least a majority of the aggregate amount of indebtedness incurred by the Company under all outstanding Notes issued pursuant to the Agreement. Any amendment or waiver affected in accordance with this Section 7 shall be binding upon the Company, the Holder and the holders of all Notes issued pursuant to the Agreement.

8. If any provision of this Note, or the application of such provision to any person or circumstance, is held invalid or unenforceable, the remainder of this Note, or the application of such provisions to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby.

9. Except as may be otherwise provided herein, all notices, requests, waivers and other communications made pursuant to this Note shall be made in accordance with Section 6.6 of the Agreement.

10. In case any Note shall be mutilated, lost, stolen or destroyed, the Company shall issue a new Note of like date, tenor and denomination and deliver the same in exchange and substitution for and upon surrender and cancellation of any mutilated Note, or in lieu of any Note lost, stolen or destroyed, upon receipt of evidence satisfactory to the Payor of the loss, theft or destruction of such Note.

11. Notwithstanding any other provision to the contrary herein, in no event shall the interest attributable to this Note exceed the maximum rate of interest then permitted under applicable law.

[The remainder of this page is intentionally left blank]

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This Note is executed as of the day first above written.

**VISTAGEN THERAPEUTICS, INC.**

By: \_\_\_\_\_  
Shawn K. Singh  
Chief Executive Officer

[Signature page to Convertible Promissory Note]

**THE SECURITIES REPRESENTED BY THIS CERTIFICATE HAVE BEEN ACQUIRED FOR INVESTMENT AND HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR ANY STATE SECURITIES LAWS. SUCH SECURITIES MAY NOT BE SOLD OR TRANSFERRED IN THE ABSENCE OF SUCH REGISTRATION OR AN EXEMPTION THEREFROM UNDER SAID ACT AND ANY APPLICABLE STATE SECURITIES LAWS.**

**THIS WARRANT AND THE SHARES PURCHASABLE HEREUNDER ARE SUBJECT TO RESTRICTIONS ON TRANSFER CONTAINED IN THAT CERTAIN SUBSCRIPTION AGREEMENT DATED \_\_\_\_\_, WHICH RESTRICTIONS ON TRANSFER ARE INCORPORATED HEREIN BY REFERENCE.**

Dated: August \_\_, 2013

Warrant Number: CSW-\_\_

**WARRANT TO PURCHASE  
COMMON STOCK  
OF  
VISTAGEN THERAPEUTICS, INC.**

This certifies that that \_\_\_\_\_, or its permitted assigns (each a "Holder"), for value received, is entitled to purchase, at an exercise price equal to \$1.00 per share (the "Exercise Price") from VISTAGEN THERAPEUTICS, INC., a Nevada corporation (the "Company"), up to \_\_\_\_\_ (\_\_\_\_) shares of fully paid and nonassessable shares of the Company's Common Stock, \$.001 par value ("Common Stock").

This Warrant shall be exercisable at any time from time to time from and after the date hereof (such date being referred to herein as the "Initial Exercise Date") up to and including 5:00 p.m. (Pacific Time) on the first to occur of (i) July 30, 2016, or (ii) ten (10) days preceding the closing date of any of the following transactions: (A) the acquisition of the Company by another entity by means of any transaction or series of related transactions (including, without limitation, any reorganization, merger or consolidation but, excluding any merger effected exclusively for the purpose of changing the domicile of the Company); or (B) a sale of all or substantially all of the assets of the Company by means of a transaction or series of related transactions; unless the Company's shareholders of record as constituted immediately prior to such acquisition or sale will, immediately after such acquisition or sale (by virtue of securities issued as consideration for the Company's acquisition or sale or otherwise) hold at least 50% of the voting power of the surviving or acquiring entity (any such transaction, a "Change of Control") (such earlier date being referred to herein as the "Expiration Date"), provided, however, a Change in Control shall not be deemed to have occurred, and this Warrant shall continue to be exercisable in accordance with its terms, in the event the Company consummates a sale of securities, in one or more transactions, to Autilion AG ("Autilion"), or its affiliates or nominees, resulting in Autilion holding at least 50% of the voting power of the Company.

1. Method of Exercise. The Holder hereof may exercise this Warrant, in whole or in part, by the surrender of this Warrant (with the Form of Subscription attached hereto duly completed and executed) at the principal office of the Company, and by the payment to the Company of an amount of consideration therefor equal to the Exercise Price in effect on the date of such exercise multiplied by the number of shares of Common Stock with respect to which this Warrant is then being exercised, payable at such Holder's election by certified or official bank check or by wire transfer to an account designated by the Company.

2. Shares to be Fully Paid; Reservation of Shares. The Company covenants and agrees that all shares of Common Stock which may be issued upon the exercise of the rights represented by this Warrant will, upon issuance, be duly authorized, validly issued, fully paid and nonassessable and free from all preemptive rights of any shareholder and free of all taxes, liens and charges with respect to the issue thereof. The Company further covenants and agrees that during the period within which the rights represented by this Warrant may be exercised, the Company will at all times have authorized and reserved, for the purpose of issue or transfer upon exercise of the subscription rights evidenced by this Warrant, a sufficient number of shares of authorized but unissued shares of Common Stock.

3. Adjustment of Exercise Price and Number of Shares. The Exercise Price and the number of shares purchasable upon the exercise of this Warrant shall be subject to adjustment from time to time upon the occurrence of certain events described in this Section 3. Upon each adjustment of the Exercise Price, the Holder of this Warrant shall thereafter be entitled to purchase, at the Exercise Price resulting from such adjustment, the number of shares obtained by multiplying the Exercise Price in effect immediately prior to such adjustment by the number of shares purchasable pursuant hereto immediately prior to such adjustment, and dividing the product thereof by the Exercise Price resulting from such adjustment.

3.1 Subdivision or Combination of Stock. In case the Company shall at any time subdivide its outstanding shares of Common Stock into a greater number of shares, the Exercise Price in effect immediately prior to such subdivision shall be proportionately reduced, and conversely, in case the outstanding shares of the Common Stock of the Company shall be combined into a smaller number of shares, the Exercise Price in effect immediately prior to such combination shall be proportionately increased.

3.2 Reclassification. If any reclassification of the capital stock of the Company shall be effected in such a way that holders of Common Stock shall be entitled to receive stock, securities, or other assets or property, then, as a condition of such reclassification, lawful and adequate provisions shall be made whereby the Holder hereof shall thereafter have the right to purchase and receive (in lieu of the shares of the Common Stock immediately theretofore purchasable and receivable upon the exercise of the rights represented hereby) such shares of stock, securities or other assets or property as may be issued or payable with respect to or in exchange for a number of outstanding shares of such Common Stock equal to the number of shares of such Common Stock immediately theretofore purchasable and receivable upon the exercise of the rights represented hereby. In any reclassification described above, appropriate provision shall be made with respect to the rights and interests of the Holder of this Warrant to the end that the provisions hereof (including, without limitation, provisions for adjustments of the Exercise Price and of the number of shares purchasable and receivable upon the exercise of this Warrant) shall thereafter be applicable, as nearly as may be, in relation to any shares of stock, securities or assets thereafter deliverable upon the exercise hereof.

3.3 Notice of Adjustment. Upon any adjustment of the Exercise Price or any increase or decrease in the number of shares purchasable upon the exercise of this Warrant, the Company shall give written notice thereof, by first class mail postage prepaid, addressed to the registered Holder of this Warrant at the address of such Holder as shown on the books of the Company. The notice shall be signed by the Company's chief financial officer and shall state the Exercise Price resulting from such adjustment and the increase or decrease, if any, in the number of shares purchasable at such price upon the exercise of this Warrant, setting forth in reasonable detail the method of calculation and the facts upon which such calculation is based.

3.4 Other Notices. If at any time:

- (1) the Company shall declare any cash dividend upon its Common Stock;
  - (2) there shall be a Change of Control;
  - (3) there shall be a voluntary or involuntary dissolution, liquidation or winding-up of the Company; or
-

(4) there shall be an initial public offering of the Company's equity securities;

then, in any one or more of said cases, the Company shall give, by first class mail, postage prepaid, addressed to the Holder of this Warrant at the address of such Holder as shown on the books of the Company, (a) at least twenty (20) days prior written notice of the date on which the books of the Company shall close or a record shall be taken for such dividend or for determining rights to vote in respect of any such Change of Control or dissolution, liquidation or winding-up, and (b) in the case of any such Change of Control or dissolution, liquidation, winding-up or initial public offering, at least twenty (20) days prior written notice of the date when the same shall take place; provided, however, that the Holder shall make a best efforts attempt to respond to such notice as early as possible after the receipt thereof. Any notice given in accordance with the foregoing clause (a) shall also specify, in the case of any such dividend, the date on which the holders of Common Stock shall be entitled thereto. Any notice given in accordance with the foregoing clause (b) shall also specify the date on which the holders of Common Stock shall be entitled to exchange their Common Stock for securities or other property deliverable upon such Change of Control, dissolution, liquidation, winding-up, conversion or initial public offering, as the case may be.

4. No Voting or Dividend Rights. Nothing contained in this Warrant shall be construed as conferring upon the Holder hereof the right to vote or to consent to receive notice as a shareholder of the Company or any other matters or any rights whatsoever as a shareholder of the Company. No dividends or interest shall be payable or accrued in respect of this Warrant or the interest represented hereby or the shares purchasable hereunder until, and only to the extent that, this Warrant shall have been exercised.

5. Warrants Transferable. Subject to compliance with applicable federal and state securities laws, this Warrant and all rights hereunder may be transferred, in whole or in part, without charge to the holder hereof (except for transfer taxes), upon the prior written consent of the Company and, thereafter, upon surrender of this Warrant properly endorsed and compliance with the provisions of this Warrant. Each taker and holder of this Warrant, by taking or holding the same, consents and agrees that this Warrant, when endorsed in blank, shall be deemed negotiable, and that the holder hereof, when this Warrant shall have been so endorsed, may be treated by the Company, at the Company's option, and all other persons dealing with this Warrant as the absolute owner hereof for any purpose and as the person entitled to exercise the rights represented by this Warrant, or to the transfer hereof on the books of the Company and notice to the contrary notwithstanding; but until such transfer on such books, the Company may treat the registered owner hereof as the owner for all purposes.

6. Lost Warrants. Upon receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction, or mutilation of this Warrant and, in the case of any such loss, theft or destruction, upon receipt of an indemnity reasonably satisfactory to the Company, or in the case of any such mutilation upon surrender and cancellation of such Warrant, the Company, at its expense, will make and deliver a new Warrant, of like tenor, in lieu of the lost, stolen, destroyed or mutilated Warrant.

7. Modification and Waiver. Any term of this Warrant may be amended and the observance of any term of this Warrant may be waived (either generally or in a particular instance and either retroactively or prospectively) only with the written consent of the Company and the Holder hereof. Any amendment or waiver affected in accordance with this Section 7 shall be binding upon the Company and the Holder.

8. Notices. All notices and other communications from the Company to the Holder, or vice versa, shall be deemed delivered and effective when given personally or mailed by first-class registered or certified mail, postage prepaid, at such address as may have been furnished to the Company or the Holder, as the case may be, in writing by the Company or such holder from time to time.

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9. Titles and Subtitles; Governing Law; Venue. The titles and subtitles used in this Warrant are used for convenience only and are not to be considered in construing or interpreting this Warrant. This Warrant is to be construed in accordance with and governed by the internal laws of the State of California without giving effect to any choice of law rule that would cause the application of the laws of any jurisdiction other than the internal laws of the State of California to the rights and duties of the Company and the Holder. All disputes and controversies arising out of or in connection with this Warrant shall be resolved exclusively by the state and federal courts located in San Mateo County in the State of California, and each of the Company and the Holder hereto agrees to submit to the jurisdiction of said courts and agrees that venue shall lie exclusively with such courts.

10. Definition of Warrant Shares. For purposes of this Warrant, "Warrant Shares" shall mean the number of shares of the Company's Common Stock issuable upon exercise of this Warrant.

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IN WITNESS WHEREOF, the Company has caused this Warrant to be duly executed by its officers, thereunto duly authorized as of the date first above written.

VistaGen Therapeutics, Inc.

By: \_\_\_\_\_  
Shawn K. Singh  
Chief Executive Officer

[Signature Page To Warrant]

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**FORM OF SUBSCRIPTION**

(To be signed only upon exercise of Warrant)

To: VISTAGEN THERAPEUTICS, INC.

The undersigned, the holder of a right to purchase shares of Common Stock of VistaGen Therapeutics, Inc. (the "Company") pursuant to that certain Warrant to Purchase Common Stock of VistaGen Therapeutics, Inc. Number CSW-\_\_\_\_\_ (the "Warrant"), dated as of \_\_\_\_\_ hereby irrevocably elects to exercise the purchase right represented by such Warrant for, and to purchase thereunder, \_\_\_\_\_ (\_\_\_\_\_) shares of Common Stock of the Company and herewith makes payment of \_\_\_\_\_ Dollars (\$\_\_\_\_\_) therefor in cash.

The undersigned represents that it is acquiring such securities for its own account for investment and not with a view to or for sale in connection with any distribution thereof and in order to induce the issuance of such securities makes to the Company, as of the date hereof, the representations and warranties set forth in the Unit Subscription Agreement, dated as of \_\_\_\_\_, by and among the Company and the Holder.

DATED: \_\_\_\_\_

\_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

Its: \_\_\_\_\_

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**ACKNOWLEDGMENT**

To: **HOLDER**

The undersigned hereby acknowledges that as of the date hereof, \_\_\_\_\_ ( \_\_\_\_\_ ) shares of Common Stock remain subject to the right of purchase in favor of \_\_\_\_\_ pursuant to that certain Warrant to Purchase Common Stock of VistaGen Therapeutics, Inc., number CSW-\_\_\_ dated as of \_\_\_\_\_.

DATED: \_\_\_\_\_

**VistaGen Therapeutics, Inc.**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Its: \_\_\_\_\_

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**Warrant Receipt**

The undersigned, \_\_\_\_\_, does hereby acknowledge receipt of Warrant Number CSW-\_\_\_\_ dated, \_\_\_\_\_, representing \_\_\_\_\_ (\_\_\_\_\_) shares of the Common Stock Warrants of VistaGen Therapeutics, Inc.

IN WITNESS WHEREOF, the undersigned has executed this Receipt as of the date set forth below.

Type: Common Stock Warrants

Warrant Number: CSW-\_\_\_\_

Number of Shares:

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**AMENDMENT TO CONVERTIBLE PROMISSORY NOTE AND WARRANT**

This Amendment to Convertible Promissory Note and Warrant (this "*Amendment*") is entered into and effective as of May 31, 2014 by and between VistaGen Therapeutics, Inc., a Nevada corporation (the "*Company*"), and the person whose signature appears on the signature page attached hereto (the "*Investor*").

**RECITALS**

WHEREAS, under the terms of a Subscription Agreement entered into between the Company and the Investor between August 2013 and February 2014, the Company issued units to the Investor, consisting of the following Company securities: (i) a convertible promissory note having a maturity date of July 30, 2014 (the "*Note*"), (ii) a warrant to purchase shares of Company common stock, par value \$0.001 per share ("*Common Stock*"), at an exercise price of \$1.00 per share at any time on or before July 30, 2016 (the "*Warrant*"), and (iii) unregistered shares of Common Stock;

WHEREAS, the Investor and the Company desire to amend the Note to, among other amendments set forth herein, extend the maturity date to the earlier of: (i) March 31, 2015, or (ii) the consummation of either an equity-based public offering registered with the U.S. Securities and Exchange Commission or an equity-based private financing, in either case resulting in gross proceeds to the Company of at least \$10.0 million (a "*Qualified Financing*"); and

WHEREAS, as additional consideration for entering into this Amendment, the Company desires to amend the Warrant to, among other amendments set forth herein, reduce the exercise price to \$0.50 per share.

**AGREEMENT**

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby agreed and acknowledged, the parties hereby agree as follows:

1. Section 2 of the Note is hereby amended and replaced in its entirety with the following:

"2. Unless sooner converted in accordance with Section 3, the entire unpaid balance of principal and all unpaid accrued interest shall become fully due and payable on March 31, 2015 ("*Maturity*")."

2. Section 3 of the Note is hereby amended and replaced in its entirety with the following:

3. (a) Automatic Conversion. Subject to the Holder's Cash Payment Option (as defined in Section 3(b) below), upon the closing by the Company of (i) an equity or equity-based public offering registered with the U.S. Securities Exchange Commission (the "*SEC*"), or (ii) an equity or equity based private financing, or series of such financing transactions not registered with the SEC, in each case resulting in gross proceeds to the Company of at least \$10,000,000 (a "*Qualified Financing*"), the outstanding principal amount of this Note together with all accrued and unpaid interest hereunder (the "*Outstanding Balance*") shall automatically be converted, at the closing of the Qualified Financing and on the same terms and conditions thereunder, into such securities issued in connection with the Qualified Financing, including warrants of the Company issued in the Qualified Financing (the "*Conversion Warrants*") (collectively, the "*Qualified Financing Securities*"). The number of Conversion Warrants to be issued upon conversion of the Note hereunder shall be determined as follows: the Outstanding Balance as of the date of consummation of the Qualified Financing x 1.25 / the price per share of common stock of the Company ("*Common Stock*") sold in the Qualified Financing (valued at the lowest per share price if more than one transaction constitutes the Qualified Financing) (the "*Automatic Conversion Formula*").

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(b) Cash Payment in Lieu of Automatic Conversion.

( i ) Qualified Financing Notice. In anticipation of, and prior to, the consummation of the Qualified Financing, and no later than five (5) business days prior to the date on which the Company intends to consummate the Qualified Financing, the Company shall deliver a notice to the Holder in accordance with Section 9 of this Note (the "Qualified Financing Notice") stating (i) its bona fide intention to consummate the Qualified Financing, and (ii) the principal terms upon which it proposes to consummate the Qualified Financing;

( i i ) Cash Payment. In lieu of automatic conversion of the Outstanding Balance upon the closing of the Qualified Financing in accordance with Section 3(a) above, the Holder may, at its option, elect to receive a cash payment from the Company (the "Cash Payment Option") equal to the Outstanding Balance as of the date of payment as satisfaction of the obligations of the Company under the Note (the "Cash Payment") by delivering written notice to the Company no later than two (2) business days after receipt of the Qualified Financing Notice by the Holder (the "Cash Payment Notice"). If the Holder elects to exercise the Cash Payment Option, the Company shall deliver the Cash Payment to the Holder upon, and as a condition to, the consummation of the Qualified Financing;

(c) Voluntary Conversion of Principal and Interest. Subject to the terms and conditions of this Section 3, and provided this Note remains outstanding, at any time and from time to time, the Holder shall have the right, at the Holder's option, to convert all or a portion of the Outstanding Balance (the "Conversion Option") into such number of fully paid and non-assessable shares of Common Stock as is determined in accordance with the following formula: the portion of the Outstanding Balance as of the date of the exercise of the Conversion Option being converted / \$0.50 (as equitably adjusted for stock splits, stock dividends, combinations, recapitalizations and the like). If the Holder elects to exercise the Conversion Option, the Holder shall, by personal delivery or nationally-recognized overnight carrier, surrender the original of this Note and give written notice to the Company (the "Conversion Notice"), which Conversion Notice shall (a) state the Holder's election to exercise the Conversion Option, and (b) provide for a representation and warranty of the Holder to the Company that, as of the date of the Conversion Notice, the Holder has not assigned or otherwise transferred all or any portion of the Holder's rights under this Note to any third parties. The Company shall, within three (3) business days thereafter, issue and deliver to the Holder the number of shares of Common Stock to which the Holder shall be entitled upon exercise of the Conversion Option.

3. As additional consideration for entering into this Amendment, the Company hereby agrees to amend the Warrant as follows:

a. The term "Expiration Date", as such term is defined in the Warrant, is hereby amended and replaced in its entirety with the following:

"This Warrant shall be exercisable at any time from time to time from and after the date hereof (such date being referred to herein as the "Initial Exercise Date") up to and including 5:00 p.m. (Pacific Time) on the first to occur of (i) December 31, 2016, or (ii) ten (10) days preceding the closing date of any of the following transactions: (A) the acquisition of the Company by another entity by means of any transaction or series of related transactions (including, without limitation, any reorganization, merger or consolidation but, excluding any merger effected exclusively for the purpose of changing the domicile of the Company); or (B) a sale of all or substantially all of the assets of the Company by means of a transaction or series of related transactions; unless the Company's shareholders of record as constituted immediately prior to such acquisition or sale will, immediately after such acquisition or sale (by virtue of securities issued as consideration for the Company's acquisition or sale or otherwise) hold at least 50% of the voting power of the surviving or acquiring entity (any such transaction, a "Change of Control") (such earlier date being referred to herein as the "Expiration Date")."

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b. The term “Exercise Price”, as such term is defined in the Warrant is hereby reduced from \$1.00 per share to \$0.50 per share. Any reference to an Exercise Price of \$1.00 per share is hereby replaced with \$0.50 per share.

c. The following shall be added to the Warrant as Section 3. All sections in the Warrant subsequent to Section 3 of the Warrant shall be renumbered accordingly:

“3. Cashless Exercise. Notwithstanding any provisions herein to the contrary at any time following the Initial Exercise Date, if the Per Share Market Value of one share of Common Stock is greater than the Warrant Price (at the date of calculation as set forth below), the Holder may exercise this Warrant by a cashless exercise; but, only if the sale by the Holder of the shares of Common Stock to be received upon exercise are not registered under an effective registration statement filed by the Issuer with the Securities and Exchange Commission. In the event of a cashless exercise, the Holder shall receive the number of shares of Common Stock equal to an amount (as determined below) by surrender of this Warrant at the principal office of the Issuer together with the properly endorsed Notice of Exercise in which event the Issuer shall issue to the Holder a number of shares of Common Stock computed using the following formula:

$$X = Y - \frac{(A)(Y)}{B}$$

Where

|     |   |
|-----|---|
| X = | the number of shares of Common Stock to be issued to the Holder.  |
| Y = | the number of shares of Common Stock purchasable upon exercise of all of the Warrant or, if only a portion of the Warrant is being exercised, the portion of the Warrant being exercised. |
| A = | the Warrant Price.  |
| B = | the Per Share Market Value of one share of Common Stock.”   |

4. The provisions of the Note and Warrant, as modified in this Amendment, shall remain in full force and effect in accordance with their terms and are hereby ratified and confirmed. In the event of any conflict between the terms and conditions of this Amendment and the terms and conditions set forth in the Note and/ or the Warrant, the terms and conditions set forth herein shall control. This Amendment shall be governed by the laws of the State of California without regard to the conflict of laws provisions thereof.

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK.]

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IN WITNESS WHEREOF, this Agreement was duly executed on the date first written above.

VISTAGEN THERAPEUTICS, INC.

By: \_\_\_\_\_  
Shawn K. Singh  
Chief Executive Officer

INVESTOR:

By: \_\_\_\_\_

Original Note Number:

Original Note Issue Date:

Initial Principal Amount of Original Note:

Original Warrant Number:

**THIS PROMISSORY NOTE HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933. NO SALE OR DISPOSITION MAY BE EFFECTED EXCEPT IN COMPLIANCE WITH RULE 144 UNDER SAID ACT OR AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR AN OPINION OF COUNSEL FOR THE HOLDER, SATISFACTORY TO THE COMPANY, THAT SUCH REGISTRATION IS NOT REQUIRED UNDER THE ACT OR RECEIPT OF A NO ACTION LETTER FROM THE SECURITIES AND EXCHANGE COMMISSION.**

**PROMISSORY NOTE**

**\$300,000.00**

April 10, 2014  
South San Francisco, California

**FOR VALUE RECEIVED**, the undersigned, **VISTAGEN THERAPEUTICS, INC.**, a Nevada corporation (“the *Company*”), hereby promises to pay to **ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI** (the *Holder*), at One Gustave L. Levy Place, New York, New York 10029, or at such other place or to such other party as Holder may from time to time designate, the principal sum of **THREE HUNDRED THOUSAND DOLLARS** (\$300,000), plus interest from the date hereof and any amounts added to this Note in accordance with Section 3 hereof, in lawful money of the United States of America and in immediately available funds, with interest on the outstanding principal amount at the simple rate of 10.0% per annum (computed on the basis of actual calendar days elapsed and a year of 360 days). Interest shall commence with the date hereof and shall accrue on the outstanding principal until paid in accordance with the provisions hereof. All of following Company securities are being issued by the Company to Holder in full satisfaction of certain invoices for license maintenance fees and reimbursable patent prosecution costs (“*License Expenses*”), as identified in Schedule 1 to this Note, pursuant to that certain Agreement between the Company and Holder, effective October 1, 2004 (the “*License Agreement*”) incurred by the Company and its subsidiaries through March 17, 2014, as well as any additional amounts payable for License Expenses through December 31, 2014, as contemplated by Section 3 hereof:

- This Promissory Note (the “*Note*”);
- Three hundred thousand (300,000) shares of unregistered Company common stock (the “*Shares*”), which Shares the Company shall, concurrently with the issuance of this Note, instruct its stock transfer agent to cause to be issued to Holder as soon as practicable following the date of this Note, , but in no event later April 30, 2014; and
- Warrants to purchase three hundred thousand (300,000) shares of unregistered Company common stock at a purchase price of \$0.50 per share (the “*Warrants*”), which Warrants shall be issued to Holder concurrently with the issuance of this Note.

1. Commencing on April 30, 2014 and continuing until December 31, 2014, the Company shall make monthly installment payments on the Note, each in the amount of \$10,000. Each payment shall be applied first to accrued interest, and thereafter to principal. The remaining unpaid balance of principal and all unpaid accrued interest shall become fully due and payable on December 31, 2014, provided, however, that the Company shall have the right to pay the outstanding principal amount of this Note together with all of the accrued and unpaid interest due and payable hereunder on the date of such payment (the “*Outstanding Balance*”) to Holder at any time prior to Maturity (as defined in Section 2 below).

**2. This Note shall mature on the earlier to occur of (i) the Company’s consummation of a Qualified Financing, as defined below and (ii) December 31, 2014 (“*Maturity*”).** For purposes of this Note, “Qualified Financing” shall mean any (i) equity-based public financing registered with the United States Securities and Exchange Commission (“*SEC*”) or (ii) equity-based private financing not registered with the SEC, in either case resulting in gross proceeds to the Company of at least \$5.0 million prior to Maturity. Upon Maturity as the result of a Qualified Financing, the entire Outstanding Balance shall be due and payable to Holder within two (2) business days of the consummation of the Qualified Financing.

3 Unless this Note shall have been paid pursuant to Section 2 hereof prior to December 31, 2014, all amounts otherwise payable by the Company to Holder for License Expenses incurred pursuant to the License Agreement from March 18, 2014 through December 31, 2014 shall automatically be added to the outstanding principal balance of this Note upon delivery of an invoice for such License Expenses by Holder to the Company. The Company shall, within twenty (20) business days of its receipt of such invoices (i) update Schedule 1 to this Note to reflect such additional invoices for License Expenses incurred after March 18, 2014 and on or before December 31, 2014 and (ii) provide such updated schedule to Holder.

4. The terms of this Note shall be construed in accordance with and governed by the laws of the State of New York, as applied to contracts to be performed entirely within the State of New York.

5. Any term of this Note may be waived (either generally or in a particular instance and either retroactively or prospectively), only with the prior written consent of Company and the Holder. Any amendment or waiver effected in accordance with this Section 5 shall be binding upon the Company and the Holder.

6. If any provision of this Note, or the application of such provision to any person or circumstance, is held invalid or unenforceable by a legally binding ruling of a court or other legal authority with jurisdiction to make such ruling, the remainder of this Note, or the application of such provisions to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby.

7. Except as may be otherwise provided herein, all notices, requests, waivers and other communications made pursuant to this Note shall be made as follows:

If to the Holder:

Robert M. Hellauer  
Director, Finance and Operations  
Mount Sinai Innovation Partners  
Icahn School of Medicine at Mount Sinai  
770 Lexington Avenue, 14th Floor  
New York, NY 10065  
Tel. No.: (212) 659-9680  
Fax No.: (212) 348-3116

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with a copy (for legal notices only) to:

Icahn School of Medicine at Mount Sinai  
One Gustave L. Levy Place, Box 1099  
New York, NY 10029  
Attention: Office of General Counsel

If to the Company:

VistaGen Therapeutics, Inc.  
343 Allerton Avenue  
South San Francisco, CA 94080  
Attention: Chief Executive Officer  
Tel. No.: (650) 577-3600  
Fax No.: (888) 482-2602

8. In case any Note shall be mutilated, lost, stolen or destroyed, the Company shall issue a new Note of like date, tenor and denomination and deliver the same in exchange and substitution for and upon surrender and cancellation of any mutilated Note, or in lieu of any Note lost, stolen or destroyed, upon receipt of evidence satisfactory to the Company of the loss, theft or destruction of such Note.

9. Notwithstanding any other provision to the contrary herein, in no event shall the interest attributable to this Note exceed the maximum rate of interest then permitted under applicable law.

This Note is executed as of the day first above written.

**VISTAGEN THERAPEUTICS, INC.**

By: \_\_\_\_\_  
Shawn K. Singh  
Chief Executive Officer

Acknowledged and agreed this \_\_\_th day of April 2014:

**ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI**

By: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

[Signature page to Promissory Note]

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Schedule 1 to Promissory Note

Unpaid invoices through March 17, 2014

|                                 | <u>Invoice date</u> | <u>Invoice amount</u> |
|---------------------------------|---------------------|-----------------------|
| Maintenance Fee 2012            | 9/1/2012            | \$ 20,000.00          |
| Maintenance Fee 2013            | 9/1/2012            | 20,000.00             |
| Legal Fee reimbursement         | 6/20/2013           | 129,224.88            |
| Legal Fee reimbursement         | 8/29/2013           | 58,497.33             |
| Legal Fee reimbursement         | 10/16/2013          | 12,455.26             |
| Legal Fee reimbursement         | 12/11/2013          | 6,562.06              |
| Legal Fee reimbursement         | 2/5/2014            | 19,712.76             |
| Legal Fee reimbursement         | 3/14/2014           | 21,978.12             |
|                                 |                     | <u>\$ 288,430.41</u>  |
| Strategic premium               |                     | 11,569.59             |
| Initial Promissory Note balance |                     | <u>\$ 300,000.00</u>  |
| Subsequent additions to note:   |                     |                       |
| Legal Fee reimbursement         | 6/2/2014            | 7,528.87              |
| Amount subject to Note          |                     | <u>\$ 307,528.87</u>  |

**THE SECURITIES REPRESENTED BY THIS CERTIFICATE HAVE BEEN ACQUIRED FOR INVESTMENT AND HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR ANY STATE SECURITIES LAWS. SUCH SECURITIES MAY NOT BE SOLD OR TRANSFERRED IN THE ABSENCE OF SUCH REGISTRATION OR AN EXEMPTION THEREFROM UNDER SAID ACT AND ANY APPLICABLE STATE SECURITIES LAWS.**

Dated: April 10, 2014

Warrant Number: CSW-\_\_\_

**WARRANT TO PURCHASE  
COMMON STOCK  
OF  
VISTAGEN THERAPEUTICS, INC.**

This certifies that that **ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI**, or its permitted assigns (each a "Holder"), for value received, is entitled to purchase, at an exercise price equal to \$0.50 per share (the "Exercise Price") from VISTAGEN THERAPEUTICS, INC., a Nevada corporation (the "Company"), up to **THREE HUNDRED THOUSAND** (300,000) shares of fully paid and nonassessable shares of the Company's Common Stock, \$.001 par value ("Common Stock").

This Warrant shall be exercisable at any time from time to time from and after the date hereof (such date being referred to herein as the "Initial Exercise Date") up to and including 5:00 p.m. (Pacific Time) on the first to occur of (i) March 31, 2019, or (ii) ten (10) days preceding the closing date of any of the following transactions: (A) the acquisition of the Company by another entity by means of any transaction or series of related transactions (including, without limitation, any reorganization, merger or consolidation but, excluding any merger effected exclusively for the purpose of changing the domicile of the Company); or (B) a sale of all or substantially all of the assets of the Company by means of a transaction or series of related transactions; unless the Company's shareholders of record as constituted immediately prior to such acquisition or sale will, immediately after such acquisition or sale (by virtue of securities issued as consideration for the Company's acquisition or sale or otherwise) hold at least 50% of the voting power of the surviving or acquiring entity (any such transaction, a "Change of Control") (such earlier date being referred to herein as the "Expiration Date").

1. Method of Exercise. The Holder hereof may exercise this Warrant, in whole or in part, by the surrender of this Warrant (with the Form of Subscription attached hereto duly completed and executed) at the principal office of the Company, and by the payment to the Company, or, at Holder's option, cancellation of indebtedness by the Company to Holder, of an amount of consideration therefor equal to the Exercise Price in effect on the date of such exercise multiplied by the number of shares of Common Stock with respect to which this Warrant is then being exercised, payable at such Holder's election by certified or official bank check or by wire transfer to an account designated by the Company, or by notice of cancellation of Company indebtedness to Holder, as the case may be.

2. Shares to be Fully Paid; Reservation of Shares. The Company covenants and agrees that all shares of Common Stock which may be issued upon the exercise of the rights represented by this Warrant will, upon issuance, be duly authorized, validly issued, fully paid and nonassessable and free from all preemptive rights of any shareholder and free of all taxes, liens and charges with respect to the issue thereof. The Company further covenants and agrees that during the period within which the rights represented by this Warrant may be exercised, the Company will at all times have authorized and reserved, for the purpose of issue or transfer upon exercise of the subscription rights evidenced by this Warrant, a sufficient number of shares of authorized but unissued shares of Common Stock.

3. Adjustment of Exercise Price and Number of Shares. The Exercise Price and the number of shares purchasable upon the exercise of this Warrant shall be subject to adjustment from time to time upon the occurrence of certain events described in this Section 3. Upon each adjustment of the Exercise Price, the Holder of this Warrant shall thereafter be entitled to purchase, at the Exercise Price resulting from such adjustment, the number of shares obtained by multiplying the Exercise Price in effect immediately prior to such adjustment by the number of shares purchasable pursuant hereto immediately prior to such adjustment, and dividing the product thereof by the Exercise Price resulting from such adjustment.

3.1 Subdivision or Combination of Stock. In case the Company shall at any time subdivide its outstanding shares of Common Stock into a greater number of shares, the Exercise Price in effect immediately prior to such subdivision shall be proportionately reduced, and conversely, in case the outstanding shares of the Common Stock of the Company shall be combined into a smaller number of shares, the Exercise Price in effect immediately prior to such combination shall be proportionately increased.

3.2 Reclassification. If any reclassification of the capital stock of the Company shall be effected in such a way that holders of Common Stock shall be entitled to receive stock, securities, or other assets or property, then, as a condition of such reclassification, lawful and adequate provisions shall be made whereby the Holder hereof shall thereafter have the right to purchase and receive (in lieu of the shares of the Common Stock immediately theretofore purchasable and receivable upon the exercise of the rights represented hereby) such shares of stock, securities or other assets or property as may be issued or payable with respect to or in exchange for a number of outstanding shares of such Common Stock equal to the number of shares of such Common Stock immediately theretofore purchasable and receivable upon the exercise of the rights represented hereby. In any reclassification described above, appropriate provision shall be made with respect to the rights and interests of the Holder of this Warrant to the end that the provisions hereof (including, without limitation, provisions for adjustments of the Exercise Price and of the number of shares purchasable and receivable upon the exercise of this Warrant) shall thereafter be applicable, as nearly as may be, in relation to any shares of stock, securities or assets thereafter deliverable upon the exercise hereof.

3.3 Notice of Adjustment. Upon any adjustment of the Exercise Price or any increase or decrease in the number of shares purchasable upon the exercise of this Warrant, the Company shall give written notice thereof, by first class mail postage prepaid, addressed to the registered Holder of this Warrant at the address of such Holder as shown on the books of the Company. The notice shall be signed by the Company's chief financial officer and shall state the Exercise Price resulting from such adjustment and the increase or decrease, if any, in the number of shares purchasable at such price upon the exercise of this Warrant, setting forth in reasonable detail the method of calculation and the facts upon which such calculation is based.

3.4 Other Notices. If at any time:

- (1) the Company shall declare any cash dividend upon its Common Stock;
- (2) there shall be a Change of Control;
- (3) there shall be a voluntary or involuntary dissolution, liquidation or winding-up of the Company; or
- (4) there shall be an initial public offering of the Company's equity securities;

then, in any one or more of said cases, the Company shall give, by first class mail, postage prepaid, addressed to the Holder of this Warrant at the address of such Holder as shown on the books of the Company, (a) at least twenty (20) days prior written notice of the date on which the books of the Company shall close or a record shall be taken for such dividend or for determining rights to vote in respect of any such Change of Control or dissolution, liquidation or winding-up, and (b) in the case of any such Change of Control or dissolution, liquidation, winding-up or initial public offering, at least twenty (20) days prior written notice of the date when the same shall take place; provided, however, that the Holder shall make a best efforts attempt to respond to such notice as early as possible after the receipt thereof. Any notice given in accordance with the foregoing clause (a) shall also specify, in the case of any such dividend, the date on which the holders of Common Stock shall be entitled thereto. Any notice given in accordance with the foregoing clause (b) shall also specify the date on which the holders of Common Stock shall be entitled to exchange their Common Stock for securities or other property deliverable upon such Change of Control, dissolution, liquidation, winding-up, conversion or initial public offering, as the case may be.

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4 . No Voting or Dividend Rights. Nothing contained in this Warrant shall be construed as conferring upon the Holder hereof the right to vote or to consent to receive notice as a shareholder of the Company or any other matters or any rights whatsoever as a shareholder of the Company. No dividends or interest shall be payable or accrued in respect of this Warrant or the interest represented hereby or the shares purchasable hereunder until, and only to the extent that, this Warrant shall have been exercised.

5 . Warrants Transferable. Subject to compliance with applicable federal and state securities laws, this Warrant and all rights hereunder may be transferred, in whole or in part, without charge to the holder hereof (except for transfer taxes), upon the prior written consent of the Company and, thereafter, upon surrender of this Warrant properly endorsed and compliance with the provisions of this Warrant. Each taker and holder of this Warrant, by taking or holding the same, consents and agrees that this Warrant, when endorsed in blank, shall be deemed negotiable, and that the holder hereof, when this Warrant shall have been so endorsed, may be treated by the Company, at the Company's option, and all other persons dealing with this Warrant as the absolute owner hereof for any purpose and as the person entitled to exercise the rights represented by this Warrant, or to the transfer hereof on the books of the Company and notice to the contrary notwithstanding; but until such transfer on such books, the Company may treat the registered owner hereof as the owner for all purposes.

6 . Lost Warrants. Upon receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction, or mutilation of this Warrant and, in the case of any such loss, theft or destruction, upon receipt of an indemnity reasonably satisfactory to the Company, or in the case of any such mutilation upon surrender and cancellation of such Warrant, the Company, at Holder's expense, will make and deliver a new Warrant, of like tenor, in lieu of the lost, stolen, destroyed or mutilated Warrant.

7 . Modification and Waiver. Any term of this Warrant may be amended and the observance of any term of this Warrant may be waived (either generally or in a particular instance and either retroactively or prospectively) only with the prior written consent of the Company and the Holder hereof. Any amendment or waiver affected in accordance with this Section 7 shall be binding upon the Company and the Holder.

8 . Notices. All notices and other communications from the Company to the Holder, or vice versa, shall be deemed delivered and effective when given personally or mailed by first-class registered or certified mail, postage prepaid, at such address as may have been furnished to the Company or the Holder, as the case may be, in writing by the Company or such holder from time to time.

9 . Titles and Subtitles; Governing Law; Venue. The titles and subtitles used in this Warrant are used for convenience only and are not to be considered in construing or interpreting this Warrant. This Warrant is to be construed in accordance with and governed by the internal laws of the State of New York without giving effect to any choice of law rule that would cause the application of the laws of any jurisdiction other than the internal laws of the State of New York to the rights and duties of the Company and the Holder. All disputes and controversies arising out of or in connection with this Warrant shall be resolved exclusively by the state and federal courts located in New York County in the State of New York, and each of the Company and the Holder hereto agrees to submit to the jurisdiction of said courts and agrees that venue shall lie exclusively with such courts.

10 . Definition of Warrant Shares. For purposes of this Warrant, "Warrant Shares" shall mean the number of shares of the Company's Common Stock issuable upon exercise of this Warrant.

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IN WITNESS WHEREOF, the Company has caused this Warrant to be duly executed by its officers, thereunto duly authorized as of the date first above written.

VistaGen Therapeutics, Inc.

By: \_\_\_\_\_  
Shawn K. Singh  
Chief Executive Officer

[Signature Page To Warrant]

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**FORM OF SUBSCRIPTION**

(To be signed only upon exercise of Warrant)

To: VISTAGEN THERAPEUTICS, INC.

The undersigned, the holder of a right to purchase shares of Common Stock of VistaGen Therapeutics, Inc. (the "Company") pursuant to that certain Warrant to Purchase Common Stock of VistaGen Therapeutics, Inc. Number CSW-612 (the "Warrant"), dated as of April 10, 2014 hereby irrevocably elects to exercise the purchase right represented by such Warrant for, and to purchase thereunder, \_\_\_\_\_ (\_\_\_\_\_) shares of Common Stock of the Company and herewith makes payment of \_\_\_\_\_ Dollars (\$\_\_\_\_\_) therefor in cash.

The undersigned represents that it is acquiring such securities for its own account for investment and not with a view to or for sale in connection with any distribution thereof.

DATED: \_\_\_\_\_

\_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

Its: \_\_\_\_\_

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**ACKNOWLEDGMENT**

To: **HOLDER**

The undersigned hereby acknowledges that as of the date hereof, \_\_\_\_\_ ( \_\_\_\_\_ ) shares of Common Stock remain subject to the right of purchase in favor of \_\_\_\_\_ pursuant to that certain Warrant to Purchase Common Stock of VistaGen Therapeutics, Inc., number CSW-612 dated as of April 10, 2014.

DATED: \_\_\_\_\_

**VistaGen Therapeutics, Inc.**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Its: \_\_\_\_\_

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**Warrant Receipt**

The undersigned, Icahn School of Medicine at Mount Sinai, does hereby acknowledge receipt of Warrant Number CSW-612 dated, April 10, 2014, representing three hundred thousand (300,000) shares of the Common Stock Warrants of VistaGen Therapeutics, Inc.

IN WITNESS WHEREOF, the undersigned has executed this Receipt as of the date set forth below.

Type: Common Stock Warrants

Warrant Number: CSW-612

Number of Shares: 300,000

Name: \_\_\_\_\_

Date: \_\_\_\_\_

ORIGINAL

## AMENDMENT NO. 3

TO

## SPONSORED RESEARCH COLLABORATION AGREEMENT

This Amendment No. 3 to Sponsored Research Collaboration Agreement ("Amendment No. 3") is entered into and effective as of April 25, 2011, by and between **University Health Network**, an Ontario corporation incorporated under the Toronto Hospital Act 1997, having a principal research office at 610 University Avenue, Suite 7-504, Toronto, Ontario, Canada M5G 2M9 ("UHN"), and **VistaGen Therapeutics, Inc.**, a California corporation having its principal address at 384 Oyster Point Blvd., Suite 8, South San Francisco, California 94080 ("VistaGen").

## RECITALS

WHEREAS, VistaGen and UHN entered into that certain Sponsored Research Collaboration Agreement, dated September 18, 2007 (as amended, the "Agreement"), pursuant to which VistaGen is funding a stem cell research and development project ("Project One") and had the option to fund two additional research and development projects (the "Options") involving embryonic stem cell technologies, with each such research project principally performed or to be principally performed by or under the direction of Gordon Keller, Ph.D. ("Dr. Keller"), Director of the McEwen Center for Regenerative Medicine (the "McEwen Centre"), a stem cell research center within UHN;

WHEREAS, pursuant to Amendment No. 1 to the Agreement ("Amendment No. 1"), VistaGen and UHN extended the term of the Agreement and the time during which VistaGen was permitted to exercise the Options such that (i) the term of the Agreement was extended to September 18, 2012 (five (5) years from the Effective Date (as defined in the Agreement)), provided however, that with respect to each Option, the term of the Agreement was extended three (3) years from the date of exercise of such Option by VistaGen to December 31, 2010;

WHEREAS, pursuant to Amendment No. 2 to the Agreement ("Amendment No. 2"), VistaGen and UHN (A) expanded the Agreement to cover pluripotent stem cell technologies, including the use of embryonic stem cells ("ES Cells") and induced pluripotent stem cells ("iPS Cells") cells, as well as cells derived from ES Cells and iPS Cells, (B) further extended the term of the Agreement and the time during which VistaGen may exercise the Options such that (i) the term of the Agreement was extended to September 18, 2017 (ten (10) years from the Effective Date), provided however, that with respect to each Option, the term of the Agreement was extended to seven (7) years from the date of exercise of such Option by VistaGen and (ii) VistaGen has until December 31, 2011 to exercise the Options, and (C) expanded the Agreement to include an additional option to fund research projects other than Project One and the Options and provide greater discretion and flexibility for VistaGen, UHN and Dr. Keller to direct and redirect funding under the Agreement among a wider range of research projects involving scientists at the McEwen Centre beyond the then predictable scope of Project One and the two additional research projects covered by the Options;

WHEREAS, VistaGen and UHN now desire to enter into this Amendment No. 3 to (A) further expand the scope of Project One and the Options to include therapeutic and cell therapy applications of iPS Cells and cells derived from iPS Cells, (B) as contemplated by Section 3.2 of the Agreement, create two additional options to fund research and development with respect to two Future Research Projects (as defined in the Agreement), each relating to therapeutic applications of iPS Cells and certain cells derived from iPS Cells as set forth in Exhibit B-4 of the Agreement (the "Future Project Options"), (C) extend the date that VistaGen shall have to exercise the Options and the Future Research Project Options until April 30, 2012 (the "Option Date") and (D) set forth on Exhibit D attached hereto a schedule of monthly sponsored research payments to be made by VistaGen to UHN pursuant to the Agreement, which payments shall be applied to research projects, the specific scope of and budgets for which shall be determined by VistaGen, UHN and Dr. Keller from time-to-time during the term of the Agreement, including, without limitation, the Core Research Projects (as described below);

WHEREAS, in consideration for this Amendment No. 3, VistaGen and UHN believe it is advisable and consistent with the long term mutual strategic interests of the parties and the McEwen Centre for VistaGen to issue to UHN, for the benefit of the McEwen Centre, One Hundred Thousand (100,000) shares of VistaGen Common Stock ("Shares"), which Shares have a current estimated fair market value of One Hundred Seventy-Five Thousand Dollars (\$175,000); and

WHEREAS, Section 8.7 of the Agreement provides that the Agreement may be amended only with the written consent of VistaGen and UHN.

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, VistaGen and UHN hereby agree to amend the Agreement as follows:

#### AM E N D M E N T

1. Definitions. Except as otherwise provided herein, capitalized terms used in this Amendment shall have the definitions set forth in the Agreement.
2. Option Fee. As consideration for this Amendment No. 3 and its rights and privileges under the Agreement, VistaGen hereby agrees to issue to UHN, exclusively for the benefit of the McEwen Centre, a total of one hundred thousand (100,000) shares of VistaGen Common Stock (the "Shares"). The parties hereby acknowledge that the current fair market value of the Shares is One Hundred Seventy-Five Thousand Dollars (\$175,000). In connection with the issuance of the Shares, UHN hereby agrees to execute and deliver such additional documents as shall be reasonably requested by VistaGen's legal counsel for the issuance of the Shares to be effected in compliance with applicable United States and Canadian securities laws and regulations (the "Securities Documents"). UHN hereby acknowledges that one or more of the Securities Documents will include provisions (i) relating to, among other things, reasonable limitations on UHN's ability to resell the Shares and (ii) acknowledging that proceeds from all such resales shall be used to fund research activities at the McEwen Centre under the direction of Dr. Keller.

3. Amendment. Section 3 of the Agreement shall be deleted in its entirety and amended to read in its entirety as follows:

“3. Option for Research Project Two, Research Project Three, Research Project Four, Research Project Five and Future Research Projects

3.1 Option for Research Project Two, Research Project Three, Research Project Four and Research Project Five.

Attached hereto as Exhibit B-2 , Exhibit B-3 Exhibit B-4 and Exhibit B-5 is a summary of four (4) additional Research Projects which the Parties would ultimately like to perform, pursuant to additional funding from VistaGen. For a period of time ending on April 30, 2012, VistaGen shall have the exclusive option to elect to have UHN undertake and commence performance of the Research Work for Research Project Two, Research Project Three, Research Project Four and/or Research Project Five. Upon receipt by UHN and Principal Investigator of (i) the written election by VistaGen to commence any such Research Work and (ii) a project budget for such Research Work, which project budget shall be mutually agreed to by VistaGen and Dr. Keller, UHN, Dr. Keller and the Project Scientists mutually selected by Dr. Keller and VistaGen’s Chief Scientific Officer shall commence to perform said Research Work. Upon UHN receiving said written election and project budget, all of the terms set forth in this Agreement shall be applicable to the Research Project identified in said written election. Research Project One, Research Project Two, Research Project Three, Research Project Four and Research Project Five are referred to collectively as the “Core Research Projects”.

3.2 Option for Future Research Projects

VistaGen, UHN and Dr. Keller acknowledge their mutual interest in developing a process to enable VistaGen and Dr. Keller to review, and to enable VistaGen to consider funding, a wide range of future research projects, other than the Core Research Projects, involving Dr. Keller and/or other McEwen Centre scientists (each such project a “Future Research Project”), including, but not limited to, the potential future projects described in Exhibit B-6 attached hereto. During the term of this Agreement, VistaGen and Dr. Keller shall discuss regularly, but no less frequently than monthly, potential

sponsored research opportunities arising from time-to-time and involving Dr. Keller and/or other McEwen Centre scientists, each of which sponsored research opportunities could become a Future Research Project. If (i) VistaGen and Dr. Keller are mutually interested in pursuing a Future Research Project, (ii) the Parties (which in respect of UHN includes Dr. Keller) agree on the nature, scope and budget for the funding of any such Future Research Project, and (iii) VistaGen agrees to fund such Future Research Project and expresses said commitment in writing to UHN, then, upon UHN's receipt of such written expression of interest and commitment from VistaGen, all of the terms set forth in this Agreement shall be applicable to each such Future Research Project."

5. Sponsored Research Payment Schedule. Attached hereto as Exhibit D is a schedule of sponsored research payments (the "VistaGen Payment Schedule") to be made by VistaGen to UHN under the Agreement during the twenty-four (24) month period beginning June 1, 2011 and ending May 31, 2013. The parties hereby agree to use reasonable efforts to meet, by teleconference and/or in person, in May 2011 to discuss and determine the specific application and allocation of the sponsored research funds paid and payable by VistaGen from time-to-time in accordance with the VistaGen Payment Schedule. The parties acknowledge and agree that such sponsored research funds shall be used solely for research and development activities for the benefit of VistaGen pursuant to the Agreement and under the direction of Dr. Keller, unless VistaGen shall agree otherwise in writing.

6. Amendment. Exhibit B-1, Exhibit B-2, Exhibit B-3 and Exhibit B-4 to the Agreement shall be deleted in their entirety and amended to read in their entirety as Exhibit B-1, Exhibit B-2, Exhibit B-3 and Exhibit B-4 attached to this Amendment No. 3. Exhibit B-5 and Exhibit B-6 and Exhibit D attached to this Amendment No. 3 shall be added as Exhibit B-5, Exhibit B-6 and Exhibit D to the Agreement.


7. Terms of Agreement. Except as expressly modified hereby, all terms, conditions and provisions of the Agreement shall continue in full force and effect.

8. Conflicting Terms. In the event of any inconsistency or conflict between the Agreement and this Amendment, the terms, conditions and provisions of this Amendment shall govern and control.


9. Entire Agreement. The Agreement, as amended by Amendment No. 1, Amendment No. 2 and this Amendment No. 3 (collectively, the "Amendments"), constitute the entire and exclusive agreement between the parties with respect to the subject matter hereof. All previous discussions and agreements with respect to this subject matter are superseded by the Agreement, as amended by the Amendments. This Amendment may be executed in one or more counterparts, each of which shall be an original and all of which taken together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the parties have executed this Amendment No. 3 as of the date first above written.

**UNIVERSITY HEALTH NETWORK**

By:   
Name: **Christopher J. Paige, PhD**  
**Vice President, Research**  
**University Health Network**  
Its: \_\_\_\_\_

**VISTAGEN THERAPEUTICS, INC.**

By:   
Shawn K. Singh, J.D.  
Chief Executive Officer

## EXHIBIT B-1

### RESEARCH PROJECT ONE

1. Development of Drug Discovery and Screening Approaches with Pluripotent Stem Cell -derived Cardiomyocytes.

The overall goal of these studies is to establish improved methods for the production of mature of human pluripotent stem cell (hPSC)-derived cardiomyocytes suitable for use in cell therapy, drug discovery, drug screening, drug toxicology assessment and drug rescue. This project builds on recent advancements from Dr. Keller's lab relating to new methods for the efficient and reproducible generation of cardiomyocytes from hPSC. The project will focus on addressing the following: 1) characterization of the functional and maturational status of the hPSC-derived cardiomyocytes in vitro; 2) development of methods for the large scale production of hPSC-derived cardiomyocytes suitable for use in cell therapy, drug discovery, drug screening and drug rescue; 3) provide cells and methods for the study of response of cardiomyocytes to select known drugs and compounds that effect their biology and functional activity; 4) provide cells and methods for the use and validation of cardiomyocytes as predictive toxicology screening assays; and 5) preclinical research and development of iPS Cell-derived cardiomyocytes for potential cell therapy applications.

2. Project Budget:

To be determined

## EXHIBIT B-2

### RESEARCH PROJECT TWO

1. Human Pluripotent Stem Cell-derived Hepatocytes. The overall goal of these studies is to establish improved methods for the production of mature of human pluripotent stem cell (hPSC)-derived hepatocytes suitable for use in cell therapy, drug discovery, drug screening, drug toxicology assessment, and drug rescue. This project builds on recent advancements from Dr. Keller's lab relating to improved methods for the efficient and reproducible generation of endodermal cells from hPSC. The project will focus on addressing the following: 1) characterization of the functional and maturational status of the hPSC-derived hepatocytes in vitro; 2) development of methods to produce mature hPSC-derived hepatocytes expressing mature adult levels of functional P450 enzymes for drug metabolism studies; 3) development of methods for the large scale production of hPSC-derived hepatocytes suitable for cell therapy, drug metabolism and toxicity screening; and 3) preclinical development of iPS Cell-derived hepatocytes for potential cell therapy applications.

2. Project Budget:

To be determined



## EXHIBIT B-3

### RESEARCH PROJECT THREE

1. Human Pluripotent Stem Cell-derived Beta-islet Cells. The overall goal of these studies is to establish improved methods for the production of mature of human pluripotent stem cell (hPSC)-derived  $\beta$ -islet cells suitable for use in cell therapy, drug discovery, drug screening, and drug rescue. This project builds on recent advancements from Dr. Keller's lab relating to improved methods for the efficient and reproducible generation of endodermal cells from hPSC. The project will focus on addressing the following: 1) characterization of the functional and maturational status of the hPSC-derived  $\beta$ -islet cells in vitro; 2) development of methods to produce mature glucose-responsive hPSC-derived  $\beta$ -islet cells expressing adult levels of insulin; 3) development of methods for the large scale production of hPSC-derived  $\beta$ -islet cells potentially suitable for in vivo transplantation studies; and 4) preclinical development of iPS Cell-derived  $\beta$ -islet cells for potential cell therapy applications.

2. Project Budget:

To be determined

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EXHIBIT B-4

RESEARCH PROJECT FOUR

1. Human iPS Cell-derived Chondrocytes. The overall goal of these studies is to establish preclinical proof of concept regarding the use of iPS Cell-derived articular chondrocytes for cell therapy applications, namely autologous cartilage repair and regeneration. This project builds on recent advancements from Dr. Keller's lab relating to differentiation conditions that produce chondrocytic precursors in murine pluripotent stem cells. The project will focus on addressing the following: 1) determination of whether newly identified murine ES Cell-derived cells are growth plate or articular chondrocyte precursors (i.e., do they produce bone or cartilage in *in vivo* animal studies); 2) development of culture conditions that support the differentiation and expansion of similar articular chondrocyte precursors from human iPS Cells; and 3) validation of the functional properties of the human iPS Cell-derived articular chondrocyte precursors in *in vivo* animal models.

2. Project Budget:

To be determined

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## EXHIBIT B-5

### RESEARCH PROJECT FIVE

1. Human iPS Cell-derived Hematopoietic Stem Cells. The overall goal of these studies is to establish preclinical proof of concept relating to the ability of certain novel iPS Cell-derived precursors to produce white cells, red cells and platelets of the blood. This project builds on recent advancements from Dr. Keller's lab relating to novel differentiation of a "2<sup>nd</sup> wave" of blood precursor. The project will focus on addressing the following: 1) evaluation of the ability of newly identified murine ES Cell-derived "2nd wave" hematopoietic precursor to survive in the bone marrow and produce multiple types of blood cells for extended periods in animal models; 2) identification of culture conditions for producing the equivalent "2nd wave" hematopoietic precursor from human iPS Cells; and 3) validation of the ability of this precursor to repopulate the bone marrow, and most if not all of the blood cells, in immunocompromised mice in long-term repopulation assays.

2. Project Budget:

To be determined

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EXHIBIT B-6

FUTURE RESEARCH PROJECTS

During the term of this Agreement, VistaGen and Dr. Keller shall consult regularly (at least once per month) about potential research projects; including, but not limited to, one or more of the following projects, each of which shall be considered a Future Research Project as set forth in Section 3.2 of the Agreement:

- Generation and development of iPS Cells for cell therapy, predictive toxicology screening, drug rescue and drug discovery applications;
  - hPSC-derived gut endocrine cells suitable for potential uses in diabetes drug discovery and development, and iPS Cell-derived gut endocrine cells for cell therapy;
  - hPSC-derived osteoblast cells suitable for potential uses in osteoporosis drug discovery and development, and iPS Cell-derived osteoblast cells for cell therapy; and
  - hPSC-derived skin cells suitable for potential uses in cosmaceutical screening, drug discovery and development, and iPS Cell-derived skin cells for cell therapy.
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EXHIBIT D

**SPONSORED RESEARCH PAYMENT SCHEDULE**

| Date        | VistaGen Payments |          |          |
|-------------|-------------------|----------|----------|
|             | 2011              | 2012     | 2013     |
| January 1   |                   | \$50,000 | \$50,000 |
| February 1  |                   | \$50,000 | \$50,000 |
| March 1     |                   | \$50,000 | \$50,000 |
| April 1     |                   | \$50,000 | \$50,000 |
| May 1       |                   | \$50,000 | \$50,000 |
| June 1      | \$50,000          | \$50,000 |          |
| July 1      | \$50,000          | \$50,000 |          |
| August 1    | \$50,000          | \$50,000 |          |
| September 1 | \$50,000          | \$50,000 |          |
| October 1   | \$50,000          | \$50,000 |          |
| November 1  | \$50,000          | \$50,000 |          |
| December 1  | \$50,000          | \$50,000 |          |

**AMENDMENT NO. 5  
TO  
SPONSORED RESEARCH COLLABORATION AGREEMENT**

**ORIGINAL**

This Amendment No. 5 to Sponsored Research Collaboration Agreement (“Amendment No. 5”) is entered into October 10, 2012 and effective as of October 1, 2012, by and between **University Health Network**, an Ontario corporation incorporated under the Toronto Hospital Act 1997, having a principal research office at 610 University Avenue, Suite 7-504, Toronto, Ontario, Canada M5G 2M9 (“UHN”), and **VistaGen Therapeutics, Inc.**, a California corporation having its principal address at 384 Oyster Point Blvd., Suite 8, South San Francisco, California 94080 (“VistaGen”).

**RECITALS**

WHEREAS, VistaGen and UHN entered into that certain Sponsored Research Collaboration Agreement, dated September 18, 2007 (as amended, the “Agreement”), pursuant to which VistaGen is funding stem cell research and development principally performed by or under the direction of Gordon Keller, Ph.D. (“Dr. Keller”), Director of the McEwen Center for Regenerative Medicine (the “McEwen Centre”), a stem cell research center within UHN;

WHEREAS, VistaGen and UHN desire to enter into this Amendment No. 5 (the “Amendment”) to set forth (A) the sponsored research projects to be funded by VistaGen under the Agreement during the period from October 1, 2012 to September 30, 2013 (the “2012/2013 Sponsored Research Projects”), (B) the budget for the Sponsored Research Projects, as agreed to by the parties (collectively, the “2012/2013 Sponsored Research Project Budgets”) and (C) the schedule of payments to be made on behalf of VistaGen by its affiliate, VistaGen Therapeutics, Inc., a Nevada corporation, to UHN pursuant to the Agreement with respect to the 2012/2013 Sponsored Research Project Budgets; and

WHEREAS, Section 8.7 of the Agreement provides that the Agreement may be amended only with the written consent of VistaGen and UHN.

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, VistaGen and UHN hereby agree to amend the Agreement as follows:

**AMENDMENT**

1. Definitions. Except as otherwise provided herein, capitalized terms used in this Amendment shall have the definitions set forth in the Agreement, as amended.
2. Amendment and Supplement to Exhibit B-1, Exhibit B-2 and Exhibit B-5 to Amendment No. 4 to the Agreement. Exhibit B-1, Exhibit B-2 and Exhibit B-5 to the Agreement shall be amended and supplemented by Exhibit B-1, Exhibit B-2 and Exhibit B-5 attached to this Amendment No. 5.
3. Amendment by Deletion. For purposes of this Amendment No. 5, Exhibit B-3 and Exhibit B-4 of the Agreement shall be deleted in their entirety, provided, however, that such

deletions shall not reduce or eliminate VistaGen's rights based upon or arising with respect to sponsored research activities described in such exhibits performed prior to the date of this Amendment.

4. Amendment and Supplement to Exhibit D to Amendment No. 4 to the Agreement. Exhibit D to this Amendment No. 5 is the schedule of sponsored research payments to be made by VistaGen to UHN with respect to the Sponsored Research Project Budgets during the twelve (12) month period beginning October 1, 2012 and ending on September 30, 2013. Accordingly, Exhibit D to Amendment No. 4 to the Agreement shall be amended and supplemented by Exhibit D to this Amendment No. 5. The parties acknowledge and agree that such sponsored research funds shall be used solely for research and development activities for the benefit of VistaGen pursuant to the Agreement and under the direction of Dr. Keller, unless VistaGen shall agree otherwise in writing.

5. Future Sponsored Research Project Budgets. VistaGen anticipates providing additional sponsored research funding to UHN during the twelve (12) month period from October 11, 2013 to September 30, 2014. The parties hereby agree to use reasonable efforts to meet, by teleconference and/or in person, before September 1, 2013 to discuss and determine the specific projects to which VistaGen's sponsored research funds for such period shall be applied. The parties acknowledge and agree that such sponsored research funds shall be used solely for research and development activities for the benefit of VistaGen pursuant to the Agreement and under the direction of Dr. Keller, unless VistaGen shall agree otherwise in writing.

6. Terms of Agreement. Except as expressly modified hereby, all terms, conditions and provisions of the Agreement shall continue in full force and effect.

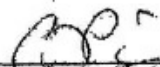
7. Conflicting Terms. In the event of any inconsistency or conflict between the Agreement and this Amendment, the terms, conditions and provisions of this Amendment No. 5 shall govern and control.

8. Entire Agreement. The Agreement, as amended by each of the four prior amendments hereto and this Amendment (collectively, the "Amendments"), constitutes the entire and exclusive agreement between the parties with respect to the subject matter hereof. All previous discussions and agreements with respect to this subject matter are superseded by the Agreement, as amended by the Amendments. This Amendment No. 5 may be executed in one or more counterparts, each of which shall be an original and all of which taken together shall constitute one and the same instrument.


[Signature Page Follows]

IN WITNESS WHEREOF, the parties have executed this Amendment No. 5 as of the date first above written.

**UNIVERSITY HEALTH NETWORK**

By:   
\_\_\_\_\_  
Christopher J. Paige, PhD  
Vice President, Research

**VISTAGEN THERAPEUTICS, INC.**

By:   
\_\_\_\_\_  
Shawn K. Singh, J.D.  
Chief Executive Officer



**EXHIBIT B-1**

**RESEARCH PROJECT ONE**

**Human Pluripotent Stem Cell-derived Cardiomyocytes**

*Generation of nodal, atrial and ventricular cardiomyocytes from hESCs and hiPSCs.*

Project focuses on recent findings indicating that sorting on the basis of NKX2.5 and SIRPA can resolve populations that display characteristics of the 3 different lineages.

The most advanced analyses is the segregation of pacemaker (Nodal) and working myocardium. Funding will support further characterization of these different cell types and analyses of the signaling pathways that regulate their specification and maturation.

*Generation and characterization of hESC- and hiPSC-derived epicardial and endocardial lineages.*

This project builds on recent findings from our lab that it is possible to generate cells that display properties of endocardial and epicardial cells. The funding would support studies aimed at further characterizing this populations and determining if interactions between them and the cardiomyocytes will impact the function and maturation of the cardiomyocytes.

*Expansion of cardiovascular progenitors*

This project builds on recent studies that have identified conditions that promote the expansion of NKX2.5+ cardiovascular progenitors. The funding would support studies aimed at optimizing expansion conditions.

**Excluded Matters:** This Research Project does not include biomarker discovery and mass spec analyses of surface markers on cardiomyocytes

**Sponsored Research Project Budget (October 2012 through September 2013)**

|                         |          |
|-------------------------|----------|
| Technician (FTE)        | \$60,000 |
| Supplies                | \$25,000 |
| Overhead                | \$25,000 |
| <hr/>                   |          |
| <b>Total \$ 110,000</b> |          |

Initialed: JP (UHN)

BS (VistaGen)

**EXHIBIT B-2**

**RESEARCH PROJECT TWO**

**Human Pluripotent Stem Cell-derived Hepatocytes**

*Generation of functional hepatocytes from hESCs and hiPSCs*


Project includes studies on identification of signaling pathways and cellular interactions that promote the generation and maturation of functional hepatocytes. One end point is the generation of hepatocytes that display levels of enzyme activity high enough for use in the pharmaceutical industry. A second end point is the generation of hepatocytes that can engraft and function in mice. Funding will cover all aspects of the project, including scale-up.

**Excluded Matters:** This project does not include the generation and characterization of cholangiocytes and analysis of disease models of Alagille Syndrome.

**Sponsored Research Project Budget (October 2012 through September 2013)**

|                       |                        |
|-----------------------|------------------------|
| Technician (50% time) | \$30,000               |
| Post-doc (75% time)   | \$60,000               |
| Supplies              | \$40,000               |
| Overhead              | \$39,000               |
|                       | <hr/>                  |
|                       | <b>Total \$169,000</b> |

Initialed:  (UHN)

  
\_\_\_\_\_  
(VistaGen)

**EXHIBIT B-6**

**RESEARCH PROJECT FIVE**

**Human iPS Cell-derived Hematopoietic Stem Cells**

*Hematopoiesis (HSC).*

Supplies for studies to develop cells capable of in vivo repopulation; and potentially to study virus-resistant engineered T-cells for cell therapy.

**Sponsored Research Project Budget (October 2012 through September 2013)**

Supplies \$30,000

**Total \$30,000**

Initialed: CP (UHN)

S (VistaGen)

**EXHIBIT D**

**PAYMENT SCHEDULE FOR SPONSORED RESEARCH PROJECT BUDGETS**

| <b><u>Payment Date</u></b> | <b><u>Sponsored Research Period Covered</u></b> | <b><u>Amount Payable</u></b> |
|----------------------------|---|------------------------------|
| 1. October 10, 2012        | October, November and December 2012             | \$75,000                     |
| 2. January 4, 2013         | January, February and March 2013                | \$75,000                     |
| 3. April 5, 2013           | April, May and June 2013                        | \$79,500                     |
| 4. July 8, 2013            | July, August and September 2013                 | \$79,500                     |
| <b>TOTAL</b>               |   | <hr/> <b>\$309,000</b>       |

## CERTIFICATION

I, Shawn K. Singh, certify that;

1. I have reviewed this Annual Report on Form 10-K of VistaGen Therapeutics, Inc., a Nevada corporation;
2. Based on my knowledge, this report, does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by the report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

June 24, 2014

/s/ Shawn K. Singh  
Shawn K. Singh, JD  
Principal Executive Officer

## CERTIFICATION

I, Jerrold D. Dotson, certify that:

1. I have reviewed this Annual Report on Form 10-K of VistaGen Therapeutics, Inc., a Nevada corporation;
2. Based on my knowledge, this report, does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by the report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

June 24, 2014

/s/ Jerrold D. Dotson  
Jerrold D. Dotson  
Principal Financial Officer

**CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,  
AS ADOPTED PURSUANT TO  
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

Pursuant to 18 U.S.C. § 1350, as created by Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned officer of VistaGen Therapeutics, Inc. (the “Company”) hereby certifies, to such officer’s knowledge, that:

(i) the accompanying Annual Report on Form 10-K of the Company for the annual period ended March 31, 2014 (the “Report”) fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

June 24, 2014

/s/ Shawn K. Singh  
Shawn K. Singh, JD  
Principal Executive Officer

/s/ Jerrold D. Dotson  
Jerrold D. Dotson  
Principal Financial Officer