

# Annual Report 2019



Breaking Down Cancer Barriers

# Message to Shareholders

Dear Shareholders,

I would like to begin by first acknowledging the Company's dedicated staff and thanking you for your continuing support. At the beginning of 2019, we set out to complete a number of major clinical development milestones and key corporate objectives. Despite tight financial constraints throughout the fiscal year, we managed to position the company to move forward.

In clinical development:

- Phase I/II L-DOS47 monotherapy clinical study final study report is almost ready, and a scientific paper is being prepared for publication;
- Patient enrollment in the Phase I dose escalation study of L-DOS47 in combination with pemetrexed and carboplatin in non-small cell lung cancer patients has come to an end. Fourteen (14) patients were dosed, of which, six (6) patients had a partial response. The full data report is expected to be available no later than the first quarter of calendar 2020. The Company is currently evaluating the possibility of launching a Phase II study to determine whether this combination can be considered as second line therapy in this indication;
- Phase II Study of L-DOS47 in combination with vinorelbine/cisplatin in lung adenocarcinoma began patient dosing in March 2019. The Company expects dose escalation to be completed by the end of calendar 2019. Randomized portion of the study may start in the new year pending dose escalation results and other factors such as financial resources;
- In August 2019, the Company received US Food and Drug Administration acceptance to start a Phase Ib/II study in pancreatic cancer of L-DOS47 in combination with doxorubicin. The Company plans to enroll approximately twenty (20) patients in this study which has been designed to demonstrate the potential utility of L-DOS47 in a second indication other than for lung cancer.

In corporate development:

- The Company has begun discussions with various capital firms, both in the US and Canada, to assist in an equity raise that would qualify the Company to list on a US Exchange such as NASDAQ.
- The company recently divested 25% of its interests in Helix Immuno-Oncology S.A. ("HIO"). The Company intends to fully divest its remaining interests in HIO.

I personally feel 2020 will be an exciting year. The Company is looking to expand its footprint in the U.S. and consolidate its leading position as the only Company with a clinical compound that treats cancer by combating tumor acidosis.

Sincerely,  
Heman Chao, PhD  
Chief Executive Officer

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This letter contains certain forward-looking statements. By their nature, forward-looking statements require us to make assumptions and are subject to inherent risks and uncertainties. Please refer to the caution regarding Forward-Looking Statements and Information on page 1 of this Annual Report for a discussion of such risks and uncertainties and the material factors and assumptions related to these statements.

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

This Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") should be read in conjunction with the consolidated financial statements of Helix BioPharma Corp. (the "Company" or "Helix") for the years ended July 31, 2019 and 2018 and the accompanying notes thereto. This MD&A is based on financial statements which have been prepared in accordance with International Financial Reporting Standards ("IFRS"). All amounts are depicted in Canadian currency unless otherwise noted.

Additional information relating to the Company can be found in the Company's Annual Information Form, which is available on SEDAR at [www.sedar.com](http://www.sedar.com).

## FORWARD-LOOKING INFORMATION

This MD&A contains forward-looking information (collectively, "forward-looking information") within the meaning of applicable Canadian securities laws. Forward-looking information means disclosure regarding possible events, conditions or financial performance that is based on assumptions about future economic conditions and courses of action and includes financial projections and estimates; statements regarding plans, goals, objectives, intentions and expectations with respect to the Company's future business, operations, research and development, including the focus of the Company's primary drug product candidate L-DOS47 and other information relating to future periods. Forward-looking information includes, without limitation, statements concerning (i) the Company's ability to continue to operate on a going concern basis being dependent mainly on obtaining additional financing; (ii) the Company's growth and future prospects being dependent mainly on the success of L-DOS47; (iii) the Company's priority continuing to be L-DOS47; (iv) the Company's development programs, including but not limited to, extension of the current drug candidate(s) to other indications and the identification and development of further tumour-targeting antibodies for DOS47; (v) the nature, design and anticipated timeline for completion of enrollment and other matters relating to the Company's ongoing clinical study programs such as the LDOS003 study combining L-DOS47 with Vinorelbine/Cisplatin ("VIN/CIS") for advanced stage lung cancer patients and the recently approved Investigational New Drug ("IND") Phase Ib/II combination study combination with doxorubicin for previously treated advanced pancreatic cancer patients by U.S Food and Drug Administration ("FDA"); (vi) seeking strategic partner support and therapeutic market opportunities; (vii) the Company's advancement in the area of cell based therapy via its subsidiary Helix Immuno-Oncology S.A. ("HIO") (viii) future expenditures, insufficiency of the Company's current cash resources and the need for financing and the Company's possible response for such matters; (ix) future financing requirements, the seeking of additional funding (including the possible receipt of grants) and anticipated future operating losses; (x) changes in the application of accounting standards and interpretations; and (xi) industry performance, competition (including potential developments relating to immunotherapies and the Company's possible response to such developments), prospects, and general prevailing business and economic conditions. Forward-looking information can further be identified by the use of forward-looking terminology such as "expects", "plans", "designed to", "potential", "believe", "intended", "continues", "opportunities", "anticipated", "2019", "2020", "2021", "2022", "next", "ongoing", "seek", "objective", "estimate", "future", or the negative thereof or any other variations thereon or comparable terminology referring to future events or results, or that events or conditions "will", "may", "could", "would", or "should" occur or be achieved, or comparable terminology referring to future events or results.

Forward-looking information includes statements about the future and are inherently uncertain and are necessarily based upon a number of estimates and assumptions that are also uncertain. Although the Company believes that the expectations reflected in such forward-looking information are reasonable, such statements involve risks and uncertainties, and undue reliance should not be placed on such statements. Forward-looking information, including financial outlooks, are intended to provide information about management's current plans and expectations regarding future operations, including without limitation, future financing requirements, and may not be appropriate for other purposes. The Company's actual results could differ materially from those anticipated in the forward-looking information contained in this MD&A as a result of numerous known and unknown risks and uncertainties, including, but not limited to:

- the Company's need for additional capital which may not be available in a timely manner or at all (whether from additional issuances of the Company's securities, grant applications or otherwise) and which, if not obtained, will have a material adverse impact on the Company and its ability to continue as a going concern;
- the risk that the Company may have to suspend or terminate one or more of its clinical trials for lack of funding, as the Company does not have sufficient funds to complete them and will need to raise additional funding, which is not assured;
- uncertainty as to whether the Company's drug product candidate(s), especially L-DOS47, will be successfully developed and marketed;
- developments in immunotherapies may result in significant changes in the treatment of cancer and may result in a reduction, which may be significant, in the potential patient population and/or treatment protocols available to chemotherapies and other treatments currently in development, such as the Company's primary drug product L-DOS47;

- the possibility of dilution to current shareholders from future equity financings;
- the impact of the ongoing volatility in the economic environment which has negatively affected the availability and terms of debt and equity financings and may have a negative effect on the Company's ability to raise further financing and its research and development initiatives;
- risk relating to the difficulty in enrolling patients in clinical trials which may result in delays or cancellation of clinical trials;
- intellectual property risks, including the possibility that patent applications may not result in issued patents, that issued patents may be circumvented or challenged and ultimately struck down, that any expiry of an issued patent, may negatively impact the further development or commercialization of the underlying technology, and that the Company may not be able to protect its trade secrets or other confidential proprietary information;
- research and development risks, including without limitation, the fact that the Company's drug product candidate(s) are complex compounds and the Company faces difficult challenges in connection with the manufacture of clinical batches, and the risk of obtaining negative findings or factors that may become apparent during the course of research or development, any of which may result in the delay or discontinuation of the research or development projects;
- partnership/strategic alliance risks and the need to secure new strategic relationships, which are both not assured;
- the Company's dependence on third parties, including without limitation, contract research organizations, contract manufacturing organizations, clinical trial consultants, collaborative research consultants, regulatory affairs advisors, and others, whose performance and interdependence can critically affect the Company's performance and the achievement of its milestones;
- the Company's dependence on assurances from third parties regarding licensing of proprietary technology owned by others, including the Company's dependence on its license of the L-DOS47 antibody;
- the need for future clinical trials, the occurrence and success of which cannot be assured, and the fact that results seen in earlier clinical trials may not be repeated in later trials;
- manufacturing risks, the need to manufacture to regulatory standards, uncertainty whether the manufacturing process for the Company's drug candidates can be further scaled-up successfully or at all and the risk that clinical batches of the Company's drug candidate may not be able to be produced in a timely manner or at all, which would have a negative effect on the timing and/or occurrence of planned clinical trials and the potential commercialization of the drug candidates;
- the possibility that ongoing drug product stability assay tests may fail, resulting in stoppage and delay of clinical study activity until such time that approved drug product is available and approved for use;
- uncertainty as to the size and existence of a market opportunity for, and market acceptance of the Company's drug product candidate(s) including as a result of possible changes in the market for the Company's drug candidates resulting from development in immunotherapies or other future cancer treatments;
- uncertainty as to the availability of raw materials that the Company utilizes to manufacture its products, and in particular, Good Manufacturing Practice ("GMP") grade materials, on acceptable terms or at all, and that the Company may not be able to timely obtain alternative suppliers upon commercially viable terms or at all, which could have a material adverse effect on the further development and commercialization of any or all of the Company's drug product candidate(s);
- the risk that either the Polish National Centre for Research and Development ("PNCRD") or the Company will terminate the grant funding agreement &/or that the PNCRD will not extend any extensions to the already set milestones for reasons that may result in the PNCRD requesting from the Company that any received financial support be paid in full within fourteen days of the day notice is served, with interest, as per the agreement;
- product liability and insurance risks;
- the risk of lawsuits and other legal proceedings against the Company;
- the effect of competition, especially from the new immunotherapy treatments for non-small cell lung cancer ("NSCLC");
- the risk of unknown side effects arising from the development, manufacture or use of the Company's products;
- uncertainty as to the Company's ability to maintain product liability insurance required by third parties and the risk of the corresponding agreement being terminated;
- the risk of misconduct on the part of employees and consultants, including non-compliance with regulatory standards and requirements;
- the need to attract and retain key personnel and reliance on key personnel;
- that the Company has no sales, marketing and distribution experience;
- government regulation, including drug price regulation, and the need for regulatory approvals for both the development and profitable commercialization of products, which are not assured;
- risks associated with the fact that the FDA and any other regulatory agency that the Company has consulted are not bound by their scientific advice, nor are any approvals given by one regulatory body binding on another;
- rapid technological change and competition from pharmaceutical companies, biotechnology companies and universities, which may make the Company's technology or products obsolete or uncompetitive;
- risks associated with claims, or potential claims, of infringement of third-party intellectual property and other proprietary rights;

- the risk of unanticipated expenses;
- the impact on the Company's finances resulting from shifts in foreign exchange rates, credit risk and interest rate risk,
- risks relating to changes in the Company's tax rates;
- risk relating to a failure to maintain an effective system of internal controls;
- risks relating to the requirements of remaining a public company;

and other risk factors that are discussed above and elsewhere in this MD&A or identified in the Company's other public filings under the Company's profile on SEDAR at [www.sedar.com](http://www.sedar.com) (together the "Helix Risk Factors"), any of which could cause actual results to vary materially from current results or the Company's anticipated future results. Certain material factors, estimates or assumptions have been applied in making forward-looking information in this MD&A, including, but not limited to, the safety and efficacy of the Company's drug product candidate(s); the Company's cost and timing in connection with the various clinical studies the Company is currently conducting or plans to conduct; that additional and sufficient financing will be obtained in a timely manner or at all to allow the Company to continue operations; the timely provision of services and supplies or other performance of contracts by third parties; future costs; the absence of any material changes in business strategy or plans, the timely receipt of required regulatory approvals, strategic partner support; and that the Helix Risk Factors will not cause the Company's actual results or events to differ materially from the forward-looking information.

For all of the reasons set forth above, which do not represent an exhaustive list of factors that may affect the forward-looking information, investors should not place undue reliance on forward looking information. The forward-looking information is based on the beliefs, assumptions, opinions and expectations of the Company's management at the time they are made, and the Company does not assume any obligation to update any forward-looking information should those beliefs, assumptions, opinions or expectations, or other circumstances change, except as required by law.

Data relevant to estimated market sizes in connection with Company's lead products under development are presented in this MD&A. These data have been obtained from a variety of published resources, including published scientific literature, websites and information generally available through publicized means. The Company attempts to source reference data from multiple sources whenever possible for confirmatory purposes. Although the Company believes the data is reliable, the Company has not independently verified the accuracy and completeness of this data.

## OVERVIEW

Helix is an immuno-oncology company primarily focused in cancer drug development. The Company is developing products for the treatment and prevention of cancer based on its proprietary technologies. The Company's product development initiatives are focused primarily on technologies that modulate the tumour microenvironment.

To date, the Company's proprietary technology platform, DOS47 has yielded two new drug product candidates, L-DOS47 and V-DOS47. L-DOS47 is currently under clinical study for the treatment of non-small cell lung cancer ("NSCLC") and previously treated advanced pancreatic cancer. L-DOS47 has completed extensive preclinical testing and manufacturing development, following which, regulatory approvals to conduct a Phase I/II clinical trial in Poland and a Phase I study in the U.S. in the NSCLC were obtained. In August 2019, the Company also received approval to conduct a Phase Ib/II combination study in patients with previously treated advanced pancreatic cancer. V-DOS47 has been licensed to the Company's Polish subsidiary for preclinical and clinical development. The V-DOS47 drug candidate uses the Company's proprietary DOS47 technology conjugated to anti-VEGFR2 antibody targeting a wide range of cancers.

The Company continues to actively pursue additional new antibody-based technologies for cell-based therapies. In September 2016 the Company announced that it was developing a novel Chimeric Antigen Receptor T-Cell (CAR-T) therapeutic. The Company believes CEACAM6 specific CAR immune cells may have broad applications in a number of cancer types and is working on two camelid single domain antibodies that target CEACAM6. In 2018, the Company announced a collaboration with ProMab Biotechnology to co-develop CAR-T for hematological cancer. The Company has since sublicensed its cellular therapy IP and license to its subsidiary, HIO, to further develop and commercialize these technologies. The Company maintains rights to the Canadian market, milestones and royalties from other territories.

The Company currently believes that its growth and future prospects are mainly dependent on the success of its DOS47 drug product candidates.

On December 23, 2016, the Company announced, it signed an exclusive out-license agreement with Xisle Pharma Ventures Trust ("Xisle") for the Company's late-stage, Biphasix™ technology platform, including the lead product candidate, interferon alpha. Under the terms of the agreement, Xisle paid an up-front fee and agreed to pay subsequent milestone payments and royalties as Xisle advances the technology. As part of the agreement, Helix retained marketing rights for Belarus, Bulgaria, Czech Republic, former Eastern Germany, Hungary, Moldova, Poland, Romania, Russia, Slovakia and Ukraine. In addition, the Company also retained non-exclusive rights for co-promotion in Canada.

The Company subsequently assigned the foregoing marketing rights which it retained to HIO, its subsidiary in Poland, pursuant to an agreement between the Company and HIO with the agreement being subject to the restrictions and limitations associated with the out-license agreement signed between the Company and Xisle. In addition, HIO will be responsible for commercialization with milestone and royalty payments to be paid back to the Company upon successful product development through to commercialization.

The Company finances its research and development programs primarily from the issuance of its securities. In addition, the Company is also looking at alternative sources of additional financing. On July 21, 2016, the Company announced that its Poland subsidiary had been awarded a funding grant from the PNCRD to develop V-DOS47. There can be no assurance that the Company will be successful in qualifying and/or receiving any additional grant money or that it will obtain additional financing or that the V-DOS47 program will be successful.

The Company expects to incur additional losses for the foreseeable future and will require additional financial resources to fund the Company's ongoing research and development activities and overhead costs.

The Company continues to not have sufficient cash reserves to meet anticipated cash needs for working capital and capital expenditures through the next twelve months. The Company's cash reserves as at July 31, 2019 of \$206,000 are not sufficient to see the current research and development initiatives through to completion or properly allocate scarce cash resources efficiently and as such, the Company will require additional financing in the very near term. Securing additional sufficient financing continues to be of critical importance to the Company.

On August 21, 2019, the Company completed a private placement financing for gross proceeds of \$7,000,005. Nevertheless, the Company still requires additional funding for its ongoing clinical development program and working capital. Given the possibility of not being able to secure sufficient additional financing, whether on a timely basis or not at all, the Company may be required to reduce, delay or cancel one or more of its planned research and development initiatives, including clinical trials along with further reductions in overhead, any of which could impair the current and future value of the Company.

## **RESEARCH AND DEVELOPMENT ACTIVITIES**

### **Background**

The immune system utilizes two strategies in attacking different types of pathogens. The humoral immune system uses antibodies as its main weapon. Antibodies are proteins that bind to extracellular foreign invaders, such as bacteria, and lead to their destruction. The cellular immune system utilizes specialized immune cells, called T-cells to identify and bind to abnormal cells and subsequently destroy them.

Cancer cells have adopted and developed several strategies for evading the immune system. In some cases, proteins are expressed on the surface of tumour cells that "turn off" attacking T-cells. By using antibodies to block these interactions (such as anti-PD1), T-cells are reactivated to kill the tumours. Although anti-PD1 and anti-PDL1 therapies (checkpoint inhibitors) have improved outcomes for patients, there are many that do not respond to these treatments. One possible explanation suggests that the unique metabolism of cancer cells creates an acidic tumour microenvironment and this acidity has the effect of interfering with T-cell function. The Company believes it has developed a novel system to raise pH at the tumour site, thus breaking the physiologic barrier that acts to defend against tumour-killing T-cells.

### ***Alkalinization using Urease***

Urease is an enzyme that catalyzes the hydrolysis of urea into carbon dioxide and ammonia ( $(\text{NH}_2)_2\text{CO} + \text{H}_2\text{O} \rightarrow \text{CO}_2 + 2\text{NH}_3$ ). The Company has conjugated urease to an antibody that specifically targets lung cancer cells, thus delivering the urease directly to the site of the tumour. L-DOS47, the Company's first drug product candidate, has recently completed a Phase I/II monotherapy trial in Poland. It is currently in a Phase I combination trial with carboplatin and pemetrexed in the United States and a Phase II combination trial with vinorelbine and cisplatin in Ukraine and Poland. By delivering urease to the tumour site, the company expects the pH of the tumour microenvironment to increase and activity of tumour-killing T-cells to be enhanced. The Company believes the urease system can be used with any tumour specific antibody as a general method for modifying the tumour microenvironment, and as such, could be combined with any of the current checkpoint inhibitor products to improve patient outcomes.

### ***CAR-T Cells***

To date, success in Adoptive Cell Transfer ("ACT") with engineered T-cells such as Chimeric Antigen Receptor T-cells ("CAR-T") has occurred mainly in the area of hematological malignancies. As of the end of 2016, 220 CAR T cell trials were documented of which approximately 188 are ongoing including nine long-term follow-up studies. Of the current trials, 133 target hematological malignancies and 78 solid tumors (Hartman et. al, EMBO Mol Med (2017) 9: 1183–1197). Most clinical trials have used autologous, unselected peripheral blood mononuclear cells ("PBMC") as the starting material and IL-2 for stimulation resulting in a CAR-T cell product consisting of CD4 and CD8 T cells with an activated effector T-cell phenotype. In five trials, more than 85% of treated patients reached complete response ("CR") as best clinical outcome (Hartman et. al, EMBO Mol Med (2017) 9: 1183–1197).

While CAR-T cell therapy has shown impressive clinical benefit, it is sometimes associated with a variety of toxicities that can be life-threatening. Several death cases have been reported, especially in the last year. These were due to neurotoxicity caused by cerebral edemas in the CD19-CAR trials sponsored by Juno Therapeutics. Whether neurological toxicities are solely restricted to CD19-specific CAR-T cells or generally associated with CAR-T cell therapy remains to be elucidated (Hartman et. al, EMBO Mol Med (2017) 9: 1183–1197).

A direct connection to another frequent side effect, the cytokine-release syndrome (“CRS”), also appears likely. CRS has so far been the most frequently observed adverse drug reaction. On-target, off-tumor recognition has become a relevant concern, since many targeted tumor antigens are also expressed on normal tissue (Hartman et. al, EMBO Mol Med (2017) 9: 1183–1197).

On August 30, 2017, the FDA approved Novartis’ Kymriah (tisagenlecleucel) for certain pediatric and young adult patients with a form of acute lymphoblastic leukemia (“ALL”). Kymriah is a genetically-modified autologous T-cell immunotherapy. Each dose of Kymriah is a customized treatment created using an individual patient’s own T-cells.

Solid tumours have created challenges and as such, it is hypothesized that the failure of CAR-T therapies to date may be the result of the acidic tumour microenvironment surrounding the cancer cell that inhibits CAR T-cell activity. The Company believes it is well positioned to use its proprietary urease-antibody technology to alkalize the tumour microenvironment and improve the ability of CAR-T cells to destroy solid tumours.

### **Check Point Inhibitors**

Dr. Robert J. Gillies of the Moffitt Cancer Center in Tampa Florida demonstrated some interesting results when treating acidic tumours in animal models. Dr. Gillies demonstrated that in alkalized tumour cells, the activity of antibodies that target PD-L1, is enhanced. This would indicate that tumour acidosis may protect tumours from immune check-point inhibitors. Since tumour acidosis is experimentally shown to occur in cancers such as breast, colon, lung and pancreas, the Company believes methodologies that can alkalize the tumour microenvironment, such as the Company’s proprietary DOS47 platform technology, may work beneficially with check-point inhibitors.

### **DOS47 – A broad anti-cancer therapeutic platform**

DOS47 is based upon a naturally occurring enzyme isolated from the jack-bean plant called urease that breaks down a natural substance found in the body, urea, into metabolites that include ammonia and hydroxyl ions. By doing so at the site of cancerous tissues in the body, the Company believes DOS47 can modify the micro environmental conditions of cancerous cells in a manner that leads to apoptosis.

DOS47 stimulates an increase in the pH of the microenvironment surrounding the cancerous cells, effectively reversing the acidic extra-cellular conditions that are believed to act to defend the tumour. This acidic environment can also reduce or negate the effectiveness of some commonly used anti-neoplastic agents. The local production of ammonia at the site of cancerous tissues is thought to readily diffuse into the cancer cells to exert a potent cytotoxic effect by interfering with their critical metabolic functions. Enzymatic action of urease at the site of cancerous cells is potentially repetitive and sustainable due to the plentiful supply of urea.

The Company is pursuing the development of DOS47 as an adjunct therapy in combination with certain chemotherapeutics, immunotherapies and/or radiation regimens, with a view to maximizing the DOS47 commercial potential.

DOS47 candidates are produced by conjugating urease with a targeting antibody or antibody fragment that can specifically direct the urease to the surface of a cancer cell. Once docked to the cell, the urease produces ammonia enzymatically through the conversion of urea found throughout the body. These conjugates of antibodies to urease are called DOS47 candidates. By selecting antibodies that are selective to different tumour cell surface receptors, the Company believes that DOS47 candidates can be used in several types of solid tumours.

In fiscal 2015, the Company entered into a collaborative research agreement with Affilogic to assess proprietary anti-tumour targeting agents in combination with DOS47. The agreement calls for a feasibility study using a targeting agent in conjugation with DOS47. Continuing development of these new conjugates is subject to a successful feasibility study, execution of a formal development and licensing agreement, and the availability sufficient financial resources.

The Company continues to reach out to third parties in order to identify and test additional tumour-targeting antibodies for conjugation with DOS47. In the event that antibody candidates worthy of further development are identified, the Company will need to discuss development and licensing arrangements, which may not be available on terms acceptable to the Company or at all.

### **L-DOS47**

L-DOS47 is the Company’s first targeted therapeutic immune-conjugate under development based on the DOS47 technology.

L-DOS47 is an antibody protein conjugate where the urease component enzymatically converts naturally occurring urea to ammonia. The L-DOS47 drug molecule includes a highly specialized camelid-derived single domain antibody, designed to identify a unique CEACAM6 antigenic site associated with NSCLC cells. By delivering the conjugate in a targeted manner, the Company believes L-DOS47 stimulates an increase in the pH of the microenvironment surrounding the NSCLC cells, reversing the acidic extra-cellular conditions that are shown to be favourable for cancer cell survival.

In 2005, the Company entered into a worldwide exclusive license with the National Research Council of Canada ("NRC"), through which it obtained the rights to combine this highly specialized camelid-derived single domain antibody with Helix's DOS47 technology. As a result, the Company has certain royalty and milestone payment obligations pursuant to the license agreement. The license agreement with the NRC has been filed under the Company's profile on SEDAR at [www.sedar.com](http://www.sedar.com). The NRC filed patent applications in respect of the antibody in Canada, the United States and other countries. On March 2, 2011, the NRC was issued a U.S. patent in respect of the antibody.

In addition to being a key for cancer progression by promoting invasiveness and metastatic behaviors of cancer cells, the acidic tumour microenvironment protects cancer cells from immunotherapy by suppressing the proliferation and cytotoxic activities of local immune cells. A series of experiments were performed in which L-DOS47 was used to neutralize acidic tissue culture media and the effects on tumor and immune cells in vitro were studied. L-DOS47 treatment reduced PD-L1 expression on the MDA-MB-231 breast cancer cell line and increased IL-2 production from the Jurkat human T cell line. In addition, L-DOS47 reduced PD-1 expression on primary human CD8+ T cells, and increased IL-2 and IFN $\gamma$  production by primary human CD8+ T cells, suggesting that L-DOS47 treatment may improve anti-tumor immune responses.

On July 11 and 18, 2017, the Company announced that it had entered into a collaboration agreement with Moffitt Cancer Center to perform basic research studies to further investigate the pharmacodynamics of L-DOS47 and determine the potential benefits of combining L-DOS47 with immune checkpoint inhibitors. Under the research plan Moffitt Cancer Center will perform in vitro and in vivo research studies to study the pharmacodynamics of L-DOS47 and its effect when combined with check-point blockage agents using their unique tumor models.

#### **V-DOS47**

V-DOS47 is an antibody DOS47 conjugate that targets the vascular endothelial growth factor 2 receptor (VEGFR2). V-DOS47 is the second immuno-oncology drug candidate derived from the Company's DOS47 technology platform.

In January 2016, the Company granted a world-wide exclusive license for V-DOS47 to HIO in Poland. The Company expects that day-to-day development activities in respect of V-DOS47 will be coordinated by HIO with coordination and oversight from some of the Company's scientists in Canada.

As a condition of successfully being awarded grant funding from the PNCRD to advance the V-DOS47, the Company established a wet lab facility in Poland. Based on the grant funding agreement, certain expenditures made commencing on March 1, 2016 are eligible for reimbursement with the final reimbursement submission to be made no later than September 30, 2021. Given the Company's forecasted spend goes beyond September 20, 2021, the Company will be asking the PNCRD in writing for an extension to the grant funding program which may or may not be granted by the PNCRD. Total costs associated with the V-DOS47 development program under the Agreement is PLN19,794,416 (\$6,756,000). Of the total project costs, the PNCRD will reimburse the Company's Polish subsidiary approximately 60% to 80% of eligible expenditures, depending on the stage of development plus a flat 17% for overhead costs, on the total government funded eligible portion of PLN12,506,956 (\$4,269,000). The Company's subsidiary is required to spend PLN4,437,460 (\$1,515,000) towards the project plus an additional PLN2,850,000 (\$973,000) for manufacturing and clinical trial documentation costs, all of which, are not eligible for subsidies from the PNCRD. Subsidized amounts may be drawn in advance or on a reimbursement basis, with varying criteria and timelines for justification of claims being made by the Company's subsidiary. Of the \$5,266,000 in total future commitments towards this program, the Company is projecting that a total of approximately \$2,543,000 will be reimbursed by the PNCRD. The Agreement may be terminated by either party upon one month's written notice with reasons for the termination clearly indicated in writing. In certain cases of termination, the Subsidiary may be obligated to return the received financial support in full within fourteen days of the day notice is served, with interest. As at July 31, 2019, the Company has received subsidies from the PNCRD of approximately \$1,289,000.

The Company had previously developed four V-DOS47 research candidates and conducted in vitro feasibility studies to establish the potential clinical applications for these molecules. HIO is expected to leverage this know-how to develop a V-DOS47 clinical drug product candidate. The Company will assist HIO by sharing its extensive knowledge in GMP manufacturing, preclinical research and clinical experiences. HIO will collaborate with several Polish institutes through the grant to complete the development of the first v-DOS47 clinical drug product candidate. The development of the clinical drug product candidate for Phase I testing is expected to take two to three years. The actual duration of the development process will depend on successful completion of preclinical research favorable for clinical testing and establishment of cGMP manufacturing processes.

As announced by the Company in August of 2017, a peer-review of V-DOS47 was published in the "Frontiers in Immunology" journal. V-DOS47 is Helix's second DOS47 development candidate following L-DOS47, which is currently in clinical testing for the treatment of triple negative breast cancer. The article, entitled "Development and Characterization of a Camelid Single Domain

Antibody-Urease Conjugate That Targets Vascular Endothelial Growth Factor Receptor 2", describes the design and construction of V-DOS47 for breast cancer and other potential indications.

### ***CAR-T for solid tumours and hematological malignancies***

#### *CEACAM6 specific CARs*

Expression of CEACAM6 protein has been reported in a variety of normal human tissues including granulocytes. However, its expression is elevated in many types of solid tumours such as breast, pancreatic, ovarian, lung and colon. CEACAM6 is envisaged as a biomarker and potential therapy target for pancreatic ductal adenocarcinoma and pancreatic intraepithelial neoplasia (Duxbury et al., 2004a, 2004c, 2004d). Recently CEACAM6 is suggested to be check point molecule in multiple myeloma.

The Company believes CEACAM6 specific CAR immune cells may have broad applications in a number of cancer types. The Company is working on two camelid single domain antibodies that target CEACAM6.

2A3 is a camelid single domain antibody isolated from a whole cancer cell immunized llama library. The antibody binds specifically to the CEACAM6 antigen with high affinity and inhibits the proliferation of CEACAM6-expressing cancer cells *in vitro*. The efficacy of CEACAM6-CAR-T cells in xenograft model was examined *in vivo*. The results strongly support that CEACAM6-CAR-T cells can be used as an effective immunotherapy agent against CEACAM6-expressing cancers, and that camelid single domain antibodies can be easily adopted for CAR-T type therapies.

The Company continues to collaborate with ProMab Technologies Inc. ("ProMab") on CAR-T. Most recently ProMab published a paper describing research and validation work on the antibody that the we are co-developing for a CAR-T application against multiple myeloma. Data described in the paper included *in vitro* work and proof-of-concept CAR-T animal studies.

#### *Vascular epithelial growth factor receptor 2 (VEGFR2) CARs*

Most solid tumours and some hematologic malignancies are characterized by an angiogenic phenotype that is an absolute requirement for tumour survival, progression, and metastasis. Therapeutic approaches targeting molecules involved in tumour angiogenesis can inhibit tumour growth. Proliferating endothelial cells in the vessels within solid tumours aberrantly express high levels of angiogenic growth factors, receptors, and adhesion molecules that are absent or barely detectable in established blood vessels, which are normally quiescent. Among these, VEGF and its receptors appear to be the dominant regulators of angiogenesis responsible for the vascularization of normal and neoplastic tissues. Overexpression of VEGF and its receptors is associated with tumour angiogenesis, survival, invasion, metastasis, recurrence, and prognosis in human cancers. VEGF stimulates angiogenesis mainly through VEGFR-2 (also known as Flk1 in mice and KDR in humans), a tyrosine kinase receptor that is overexpressed in tumour endothelial cells and on some tumour cells. Pharmacologic approaches to inhibit VEGF, using monoclonal antibodies or small molecules, are of value in cancer treatment, though the cytostatic rather than cytotoxic nature of these interventions and the redundancy of angiogenic pathways have limited the curative potential of these treatments. The Company believes VEGFR2 specific CAR immune cells may have broad applications in a number of cancer types. Helix is working on two camelid single domain antibodies that target VEGFR2.

The Company is also leveraging its know-how in manipulating the tumour microenvironment, and its expertise in developing unique single domain antibody therapeutics to develop CAR-T novel cell-based treatments. Helix intends to develop CARs for ACT for solid and hematological malignancies. The Company has selected CEACAM6 and VEGFR2 specific CARs for solid tumour. For hematological malignancies the Company has selected CD19, CD22 and BCMA as potential targets.

On March 2018, The Company has entered a collaboration agreement with ProMab Biotechnologies, Inc. ("ProMab") to develop novel antibody and chimeric antigen receptor T-cell therapy ("CAR-T") that targets BCMA to treat multiple myeloma. In this collaboration, the Company retains commercial rights for this CAR-T in Canada and Europe.

The Company has had discussions with five Polish hospitals with plans to establish centers of excellence, the European Center for Cancer Immunotherapy ("ECCI"), that will participate in the development of proprietary immune therapies. seeking investment in the establishment of the ECCI in Poland once a business/strategic plan has been finalized and approved by the Company's Board of Directors.

### **Clinical study initiatives**

Regulatory approvals have been granted to the Company to conduct three LDOS-47 clinical studies for the treatment of NSCLC, a Phase I combination study (LDOS001) in the U.S., a Phase I monotherapy study in Poland and a Phase II combination study in Poland, Ukraine and Hungary. In addition, the Company recently received regulatory approval for an L-DOS47 Phase Ib/II study (LDOS006) in the U.S. for a new pancreatic cancer indication.

### *U.S. Phase I clinical study ("LDOS001")*

On April 22, 2014, the Company announced an IND approval by the FDA to commence a study for an L-DOS47 Phase I, open label, dose escalation study in combination with standard doublet therapy of pemetrexed/carboplatin in patients with Stage IV recurrent or metastatic non-squamous NSCLC. The Company has initiated three U.S. sites: Dr. Sarina Piha-Paul at the MD Anderson Cancer Center, Dr. Chandra Belani at Penn State University and the Milton S. Hershey Medical Center, and Dr. Afshin Dowlati at University Hospitals Case Medical Center.

On November 30, 2016 the Company announced that after reviewing safety data from the Phase I/II study of L-DOS47 in non-squamous non-small cell lung cancer (LDOS002), the FDA had accepted an accelerated escalation scheme for L-DOS47 dosing in the U.S. Phase I study (LDOS001) up to 12µg/kg in combination with pemetrexed/carboplatin.

The Company provided an update to the LDOS001 study at the Biotech Showcase meeting on January 10, 2017 in San Francisco. Highlights of the presentation included the following:

- No dose limiting toxicities reported at doses up to 0.78µg/kg;
- Partial responses were reported in three (3) of the first six (6) patients dosed;
- Best tumour response reported was a 44% reduction in the sum of target lesions measured; and
- Three (3) patients continued L-DOS47 monotherapy following induction therapy of L-DOS47 in combination with pemetrexed/carboplatin.

On May 26, 2017, the Penn State Cancer Institute (PSCI) announced closure of the site due to limited enrollment activity. The site has subsequently been closed and no longer actively recruiting patients.

On June 29, 2017, the MD Anderson Electronic Protocol Accrual Auditing Committee (ePAAC) met to review the LDOS001 protocol due to slow patient recruitment. The committee decided to keep the protocol open for an additional six months at which time, another review will be conducted.

On July 25, 2017 the Company announced the opening of patient screening in the third dosing cohort. After a review of safety data, the Safety Review Committee ("SRC") recommended that Helix begin enrollment of patients into the third dosing cohort of study LDOS001. Patients enrolled in the third dosing cohort will receive 1.50 µg/kg in combination with pemetrexed/carboplatin.

On September 27, 2017 the Company announced that the FDA had approved an amendment to their U.S. Phase I study, protocol LDOS001, accelerating the dose escalation phase of the study. In order to maximize the number of patients receiving a potentially active dose of L-DOS47, the study implemented an accelerated dose design up to 6µg/kg followed by a standard 3+3 design for the final two dosing cohorts, 9 and 12 µg/kg respectively.

On May 29, 2018 the Company announced the opening of patient screening in the fourth dosing cohort. After a review of safety data, the SRC recommended that Helix begin enrollment into the fourth dosing cohort. Patients enrolled in this cohort will receive LDOS47 at a dose level of 3.0 µg/kg in combination with pemetrexed/carboplatin.

On July 25, 2018 the Company announced the completion of safety review for the fourth dosing cohort and following SRC recommendations, will open patient screening in the fifth dosing cohort. Patients enrolled in this cohort will receive L-DOS47 at a dose level of 6.0 µg/kg in combination with pemetrexed/carboplatin.

On September 13, 2018 the Company announced the opening of patient screening in the sixth cohort, following SRC review of safety data from cohort five. Patients enrolled in the sixth of seven dose escalation cohorts will receive L-DOS47 at a dose level of 9.0 µg/kg in combination with pemetrexed/carboplatin.

On July 1, 2019, patient recruitment was closed with the final cohort enrolling only two patients rather than the expected three patients due to slow enrolment. A total of fourteen (14) patients have been dosed across 6 dose levels: 0.59 µg/kg, 0.78 µg/kg, 1.5 µg/kg, 3.0 µg/kg, 6.0 µg/kg and 9.0 µg/kg. Of fourteen patients assessed for tumour response, six (6) patients have had a confirmed partial response (as defined by RECIST v1.1) following treatment of L-DOS47 in combination with pemetrexed/carboplatin, remaining progression-free ranging from 5.9 to 12.4 months. One additional patient had stable disease and remained progression-free for 13.3 months.

With the recent FDA approval of pembrolizumab (Keytruda®) as first line treatment for NSCLC with PD-L1>1%, either as first line or in combination with carboplatin/pemetrexed, there is an urgent need for data to demonstrate safety of LDOS47 in combination with accepted standard chemotherapies, and also in combination with immunotherapies that are being offered with growing frequency.

The Company expect to have a final clinical study report no later than the first calendar quarter of 2020.

*European Phase I/II clinical study in Poland (“LDOS002”)*

On July 25, 2011, Helix announced that the Company had received approval from the Central Register of Clinical Trials at the Polish Ministry of Health to perform a European Phase I/II clinical study with L-DOS47 and, on May 14, 2012, announced that clinical site initiation and patient recruitment activities had commenced for its European Phase I/II clinical study of L-DOS47. On October 23, 2012, the Company announced that its first patient had been enrolled and the first dose had been administered in this study.

The study was conducted at five Polish centers under the direction of Dr. Dariusz Kowalski at The Maria Skłodowska-Curie Memorial Cancer Centre & Institute of Oncology as the overall coordinating investigator, together with four other principal investigators: Prof. Cezary Szczylik, MD, PhD at the Military Medical Institute, Prof. Elzbieta Wiatr, MD, PhD at the National Tuberculosis and Lung Diseases Research Institute, Dr. Aleksandra Szczensa, MD, PhD at the Mazovian Center of Pulmonary Diseases and Tuberculosis in Otwock and Prof. Rodryg Ramlau, MD, PhD at Med. Polonia Hospital Poznan.

The study was conducted in patients with inoperable, locally advanced, recurrent or metastatic, non-squamous stage IIIb/IV NSCLC. The study recruited patients eligible for inclusion into escalating doses of L-DOS47 given as a monotherapy. The study utilized an open-label design, allowing for periodic status updates through its course. The study was intended to demonstrate valuable safety and proof-of-concept efficacy data for L-DOS47.

In the Phase I portion of the study, patients received weekly doses of L-DOS47, administered as an intravenous infusion over 14 days, followed by seven days' rest (one treatment cycle is three weeks), in order to determine the MTD of L-DOS47. The Phase II portion of the study evaluated the preliminary efficacy of L-DOS47.

In the Phase I component of the study, a total of 55 male and female patients, at least 18 years of age, with histologically confirmed non-squamous NSCLC were dosed at 16 L-DOS47 dose levels. Patients were required to have an Eastern Cooperative Oncology Group performance status of 0 – 2 at the screening visit for this study and have at least one site of measurable disease per RECIST v1.1.

The Phase II component enrolled the same patient population as the Phase I at an L-DOS47 dose of 13.55µg/kg. Patients in the study were dosed twice weekly over 14 days (Days 1, 4, 8, 11) followed by a 7-day rest. A total of 21 patients were dosed in the first stage of the Phase II component of the study.

To date, the Company completed four interim data reviews in connection with the LDOS002 Phase I study and one final review of Phase II study.

On October 15, 2013, the Company announced the completion of an interim data review of the first four cohorts for this study. The release stated that L-DOS47 was well tolerated for all patients treated within all cohorts. None of the treatment related adverse events reported to date met the definition of a dose-limiting toxicity. Adverse events reported as of that date were those normally expected for the population under study.

A review of available pharmacokinetic (“PK”) and immunogenicity data showed that these data so far, were consistent with trends seen within pre-clinical animal studies of L-DOS47. Results from these reviews, together with safety data provided guidance on the treatment schedule and dosing for the Phase II portion of the study.

Based on Radiologic Evaluations, patients assigned a status of “Progressive Disease” following any such assessment were withdrawn from the study. At least one patient in each of the four cohorts dosed had a radiological assessment of “Stable Response”. Duration of treatment increased with each dose escalation up to Cohort 4. One patient in Cohort 3 was dosed for 6 cycles without disease progression. None of the patients treated to date had a partial or complete response as defined by RECIST v1.1 definition.

On September 30, 2014, the Company announced the completion of a further interim data review for the first eight cohorts for the LDOS002 study. The review included all available data, including patient demographics, safety assessments, PK data, immunogenicity and radiological tumour assessments. The following observations were made:

- Adverse events reported were expected for investigational product and population under study;
- No Dose Limiting Toxicities (“DLTs”) have been reported;
- Stable disease observed in radiological assessments of 12 of 24 (50%) of patients treated; and
- Two patients completed six cycles of treatment each.

On September 8, 2015, the Company announced the presentation and update of the ongoing clinical study LDOS002 for the Company’s drug candidate L-DOS47 during the 16th World Conference on Lung Cancer held in Denver Colorado. The presentation included the following data:

- 40 patients were enrolled in the first twelve dosing cohorts;
- L-DOS47 was well tolerated at the dose levels up to 4.33 µg/kg;

- No DLTs were reported for Cohorts 1-12;
- One (1) DLT was reported for Cohort 13;
- adverse events reported to date were expected for the population under study;
- 21 of the 40 patients had an overall response of stable disease based on radiological assessment after completing two cycles of L-DOS47;
- 11 of these 21 patients continued with a response of stable disease based on radiological assessment after completing four cycles of L-DOS47;
- one (1) patient in cohort 9 was dosed for 10 cycles (approximately seven (7) months) without disease progression;
- the study is currently enrolling patients in the thirteen-dosing cohort (5.76 µg/kg).

On December 6, 2016, the Company presented the following LDOS002 Phase I data for the Company's drug candidate L-DOS47 during the 17<sup>th</sup> World Conference on Lung Cancer held in Vienna, Austria:

- 90 patients were consented and screened for participation in the study;
- 55 patients were administered at least one dose of L-DOS47 at dose levels ranging from 0.12 to 13.55µg/kg;
- 21 patients completed four treatment cycles and 16 patients were administered additional L-DOS47 cycles;
- Comparatively, patients in cohorts 13 to 16 (5.76 to 13.55µg/kg) were exposed to more L-DOS47 for a longer duration without a significant change to the safety profile of L-DOS47 compared to the other dosing cohorts;
- 44, or 80% of the patients in the safety population had at least one treatment emergent adverse event;
- L-DOS47 did not elicit a dose-dependent release of cytokines at doses up to 13.55µg/kg
- The MTD of L-DOS47 was not reached in the Phase I component of study LDOS002 at doses administered up to 13.55µg/kg;
- L-DOS47 was well tolerated at all dose levels up to 13.55µg/kg.
- A dose response trend was observed when comparing the percentage of patients who were progression free at 16 weeks across dose ranges;
- A similar trend was observed when comparing the percentage of patient who had an overall tumour response of Stable Disease (as defined in RECIST v1.1) and had a reduction in the sum of target lesions;
- 11 of 14 or 79% of patients in the highest dosing cohorts (5.76 to 13.55µg/kg) had an overall tumour response of Stable Disease following the administration of two cycles of L-DOS47;
- Seven (7) of 14 or 50% of patients in the same dosing cohorts had an overall tumour response of Stable Disease and a reduction in the sum of target lesions and 57% of patients were progression free for greater than 16 weeks.

On March 8, 2016, the Company announced the following approved changes by the central ethics committee overseeing the Phase I/II study in Poland as it relates to the Phase II component of the study, which the Company intends to initiate:

- There will be no further escalations of L-DOS47 past cohort 16. If there are no further dose limiting toxicities, the cohort 16 dose, 13.55 µg/kg, will be the dose administered to patients in the Phase II dose.
- The safety profile supports a more frequent administration of L-DOS47. After reviewing safety, pharmacokinetic and immunogenicity data, L-DOS47 will be dosed twice weekly over 14 days (Days 1, 4, 8, 11) followed by a 7-day rest in the Phase II study.
- The number of patients in the Phase II study will be increased to 45 patients. Based on Simon's optimal two-stage design, 17 evaluable patients will be enrolled in the first stage of the Phase II component of the study. If there is/are ≥ 1 response(s) out of these initial 17 evaluable patients, 22 additional evaluable patients will need to be enrolled. To obtain 39 patients evaluable for response, enrolment of approximately 45 patients are needed.

On April 21, 2016, the Company announced the approval by the Trial Steering Committee to initiate the Phase II component of the LDOS002 study. On April 28, 2016, the Company announced the enrolment of the first patient in the Phase II component of the LDOS002 study. The first Phase II patient was dosed on May 10, 2016 and had now completed their first L-DOS47 cycle.

Although the Phase II intensified L-DOS47 regimen was well tolerated by patients enrolled in the first stage of the study, an improvement in potential benefit to patients compared to the Phase I regimen (L-DOS47 dosed once weekly over 14 days (Days 1, 8) followed by a 7-day rest) was not observed. The potential complications associated with more frequent intravenous administrations in LDOS002 did not support the potential benefit to patients, past cycle four. As a result, the LDOS002 protocol was amended to limit the number of dosing cycles to a maximum of 6 cycles.

Following the review of clinical data collected to date, L-DOS47 continues to be well tolerated. The data also suggests that L-DOS47 may provide a clinical benefit for certain patients. After completion of enrolment for the first stage of the Phase II component of study LDOS002 (n=21), a Trial Steering Committee Meeting was held on December 19, 2017 to review safety and efficacy data to determine next steps. A recommendation was made by the committee to stop further enrolment into the second stage of the Phase II component of the study due to lack of efficacy as defined by protocol (≤ 1objective response).

All analyses have been completed and a draft clinical study report is currently under review and expected to be finalized by the end of calendar 2019.

### *Phase II clinical study ("LDOS003")*

A potential secondary yet unproven aspect of L-DOS47 action is the observation that an acidic pH microenvironment (< pH 6.8) may limit the effectiveness of weakly basic cytotoxic drugs employed in treatment of lung and other solid tumours. An acidic microenvironment is associated with protonation of these agents and decreased uptake and alkalisation can result in enhanced agent uptake and cytotoxicity. Furthermore, extracellular acidity may also inhibit the active transport of some drugs. This raises the possible application of L-DOS47 to combination cancer therapies with agents which have little or no overlapping toxicities.

This study is designed to determine the possible chemo-enhancing properties of L-DOS47. The possibility of combining L-DOS47 with a weakly basic agent like vinorelbine may improve therapeutic outcomes for cancer patients. The vinorelbine/cisplatin combination is used as a first-line treatment for lung adenocarcinoma.

The Company has initiated a Phase II, open-label, randomized study in male and female patients aged  $\geq 18$  years old with metastatic lung adenocarcinoma. The staging will be conducted according to Tumour Node Metastases (TNM), 8<sup>th</sup> Edition. In Part 1 of the study (Dose Escalation), patients will receive eight (8) doses of L-DOS47 over four (4) cycles. On Day 1 and Day 8 of each cycle, L-DOS47 (administered as an intravenous ("IV") infusion) will be administered 24 hours before vinorelbine/cisplatin. Once the maximum tolerated dose of L-DOS47 as an adjunct to vinorelbine/cisplatin is determined, patients in Part 2 of the study (Randomized Treatment) will be randomly assigned to receive L-DOS47 in combination with vinorelbine/cisplatin or vinorelbine/cisplatin alone. Six (6) sites have been identified in Poland and the Ukraine to participate in Part 1. Initial Competent Authority approval was received for Ukraine in February 2018, and a further amendment approval was received in March 2018. Ethics approvals for three Ukraine sites are already in receipt since end of February 2018. Competent Authority and Ethics Committee approvals for three sites in Poland were received in April 2018. Site selection activities to add a third country, Hungary, to the randomized treatment part of the study were completed in March 2018.

The Company had placed the LDOS003 study on hold since April 2018 due to the Company's limited financial resources at the time. Activities resumed in November 2018, and Competent Authorities approval for Hungary was received on November 29, 2018. First sites were initiated in Ukraine and Poland on December 13, 2018 and January 24, 2019, respectively. The first subject entered into screening for the Part I dose escalation phase of the study was in Ukraine on February 19, 2019, and the first study drug dose was subsequently initiated on March 6, 2019. Safety data review for the first cohort (6  $\mu\text{g}/\text{kg}$ ) was completed by the Trial Steering Committee on April 15, 2019, with a recommendation to escalate to the next cohort dose level (9  $\mu\text{g}/\text{kg}$ ). The Trial Steering Committee completed safety data review for the second cohort of patients (9  $\mu\text{g}/\text{kg}$ ) on July 18, 2019, with a recommendation to escalate to the next cohort dose level (12  $\mu\text{g}/\text{kg}$ ). To date, two (2) patients have been dosed at 12  $\mu\text{g}/\text{kg}$  on October 8 and 16, 2019, respectively.

The Company has determined that it will not be moving forward with Part 2 of the study unless certain clinical objectives are met in Part 1 of the study and sufficient capital is obtained, or the Company enters into a co-development partnership with a third party.

In the event that both conditions above are met, the Company does not have sufficient supply of L-DOS47 to complete Part 2 of the study and as a result, would have to manufacture additional drug product. Manufacturing of any new drug product could take up to one year and would be subject to successful quality assurance release and availability.

Vinorelbine/cisplatin chemotherapy combination in the US has become infrequent due to the rapidly evolving treatment landscape and the growing prominence of immunotherapies such as Keytruda®. The Company had commenced this study based on the use of vinorelbine/cisplatin chemotherapy combinations in Eastern Europe and Asian markets.

### *U.S. Phase I clinical study ("LDOS006")*

Following a June 4, 2018 Scientific and Strategic Advisory Board ("SSAB"), in collaboration with Dr. Von Hoff at Translational Genomics Research Institute in Scottsdale, Arizona, the Company began early development of a Phase I/II study, L-DOS47 given in combination with doxorubicin, for previously treated advanced pancreatic cancer. Pancreatic cancer accounts for approximately 3% of all cancers in U.S. for which there are currently few treatment options. An IND was filed on July 8, 2019 and the subsequent approval of the FDA was received on August 6, 2019. The first site and Principal Investigator, Dr. Erkut Borazanci at HonorHealth in Scottsdale, Arizona, has been identified. Study start-up activities are currently well under way with a site initiation anticipated in November 2019.

The Company does not have sufficient supply of L-DOS47 to complete the study, and as a result, has recently contracted with a third-party manufacturer to produce new drug product that could take up to one year and would be subject to successful quality assurance release and availability. The Company's current supply of L-DOS47 continues to be subjected to stability assays every six months. The next planned stability study for the current batch of drug product is scheduled for November 2019. Provided the stability assay passes, the current available batch of drug product should be available for use up to April of 2020 at which point in time another stability assay will be scheduled. In the event that any of the stability assays (current batch or new production batch) does not pass, the Company's clinical studies and any planned research and development programs would likely face delays and possibly be cancelled which could impair the current and future value of the business.

Given the Company's limited current cash resources and the possibility of not being able to obtain additional financing on a timely basis, the Company may be required to reduce, delay or cancel one or more of its planned research and development programs, including clinical studies, along with further reductions in overhead, any of which could impair the current and future value of the business.

### **Commercialization**

The Company's DOS47 commercialization objective is to eventually enter into a strategic partnering alliance with a large pharmaceutical company, on an individual or multiple drug candidate basis, such as L-DOS47 or any potential new DOS47 drug product candidate. The Company has retained Deloitte Corporate Finance as its strategic advisor to explore partnering and licensing Opportunities in February. The intention of Company is to enter a structured process that will include preparing the Company to have discussions with potential partners, engaging in dialogue with a targeted group of qualified partners and licensees, and entering negotiations on a prospective partnership, alliance or licensing transaction. In the meantime, the Company will continue to gather as much value-adding clinical data/findings, which demonstrate the safety and efficacy of L-DOS47 in patients or any other new potential DOS47 drug candidate so as to maximize value for shareholders when entering into a strategic partnering alliance.

### **Market and Competition**

Based on information published in "Key Statistics for Lung Cancer" by the American Cancer Society ([www.cancer.org](http://www.cancer.org)), lung cancer accounts for about one out of four of all cancer deaths and is by far the leading cause of cancer death among men and women in the U.S. It is estimated that in 2017 there will be over 222,500 new lung cancer cases.

If detected early, surgical removal of the cancerous tissue is currently a patient's best option. However, in the vast majority of cases, the cancer is not typically identified until it has advanced to a level at which surgical intervention is no longer an option. In the cases of inoperable, locally advanced, recurrent or metastatic NSCLC and with no known targetable mutations, treatment strategies consist of one or more of today's leading chemotherapeutic drug regimens for lung cancer (e.g. platinum therapy together with certain leading chemotherapeutic drugs). Typically, these regimens relieve symptoms and, at best, delay progression of the disease.

Disease progression, even with targeted therapies, is highly likely to occur, and there are no clear guidelines and/or indications once such therapies fail. Maintenance therapy following the induction of first-line therapy is also a treatment strategy gaining support.

Immunotherapies such as immune checkpoint inhibitors that target Programmed Death 1 ("PD-1") or its ligands, Programmed Death Ligand 1 or 2 ("PD-L1" and "PD-L2", respectively) are showing significant clinical successes in NSCLC. On March 4, 2015 the FDA approved Nivolumab, the generic name for the trade drug named Opdivo®, which targets PD-1 for the treatment of metastatic squamous NSCLC with progression on or after platinum-based chemotherapy. On October 2, 2015, the FDA granted accelerated approval for Pembrolizumab, the generic name for the trade drug named Keytruda®, which targets PD-1 to treat patients with advanced metastatic NSCLC whose disease has progressed after other treatments and with tumours that express PD-L1. Anti-PD-L1 drugs such as MPDL3280A from Roche are also advancing rapidly through late stage clinical trials.

In 2015, three randomized Phase III trials found the immune checkpoint inhibitors nivolumab and pembrolizumab to have superior efficacy and less toxicity compared with second-line docetaxel chemotherapy in patients with NSCLC. For the first time, agents blocking a single pathway have shown significant benefit across multiple tumour types, with US Food and Drug Administration (FDA) approval in NSCLC, melanoma, and bladder and renal cell carcinoma. Now more than 1,000 immune checkpoint clinical trials are underway. Many possible treatment avenues are being explored with immune checkpoint inhibitors, including combinations with radiation, chemotherapy, targeted therapy, and other checkpoint inhibitors. Some studies are also investigating checkpoint inhibitors as front-line therapy.

As of March 2017, the FDA had approved five checkpoint inhibitor drugs: ipilimumab (Yervoy®), pembrolizumab (Keytruda®), nivolumab (Opdivo®), atezolizumab (Tecentriq®) and avelumab (Bavencio®).

On May 10, 2017, the FDA granted accelerated approval to pembrolizumab (KEYTRUDA®, Merck and Co., Inc.) in combination with pemetrexed and carboplatin for the treatment of patients with previously untreated metastatic non-squamous non-small cell lung cancer (NSCLC). Approval was based on a cohort (G1) of patients enrolled in an open-label, multicenter, multi-cohort study (KEYNOTE-021). As a result of these developments in the treatment of NSCLC, the Company is currently reassessing its L-DOS47 clinical program given that: (a) its target therapeutic indication, being inoperable, locally-advanced, recurrent or metastatic NSCLC, may be a good candidate to combine with the emerging best-in-class immunotherapies; and (b) leading therapeutics for such oncology applications have commonly been high revenue generators for the pharmaceutical sector. The FDA recently approval pembrolizumab (Keytruda®) as first line treatment for NSCLC with PD-L1>1%, either as first line or in combination with carboplatin/pemetrexed. Consequently, there is an urgent need for data to demonstrate safety of LDOS47 in combination with accepted standard chemotherapies, and also in combination with immunotherapies that are being offered with growing frequency.

Technological competition from pharmaceutical companies, biotechnology companies and university researchers is intense and is expected to continue to be very intense. Many competitors and potential competitors have substantially greater product development capabilities and financial, scientific, marketing and human resources than the Company, providing them with a competitive advantage over the Company.

### ***The Biphasix™ Topical Formulation System***

The Biphasix™ Topical Formulation System is a platform technology which the Company acquired and further developed for microencapsulating therapeutic compounds in multilayered, lipid-based microvesicles. These microvesicles have complex structures that include a variety of compartments into which drug molecules can be integrated. The principal application of the technology is in the preparation of topical dosage forms for the dermal (into the skin) or mucosal (into the mucosal tissues) delivery of large molecular weight drug compounds.

#### *Topical Interferon Alpha-2b*

Due to a lack of funding, a decision was made by the Company in fiscal 2012 to downsize and eventually close the Saskatoon laboratory which supported the Topical Interferon Alpha-2b drug development program.

On December 23, 2016, the Company announced, it signed an exclusive out-license agreement with Xisle for the Company's late-stage, Biphasix™ technology platform, including the lead product candidate, interferon alpha. Xisle is responsible for the continued clinical development and subsequent commercialization of the product for the treatment of HPV-induced, low-grade, cervical intraepithelial lesions. Under the terms of the agreement, Xisle paid an up-front fee of \$125,000 USD and agreed to pay subsequent milestone payments as they advance the technology to registration and market approvals and royalties. As part of the agreement, Helix retains marketing rights for Belarus, Bulgaria, Czech Republic, former Eastern Germany, Hungary, Moldova, Poland, Romania, Russia, Slovakia and Ukraine. In addition, the Company also retains non-exclusive rights for co-promotion in Canada.

The Company subsequently assigned the marketing rights which it retained over to HIO in Poland pursuant to an agreement between the Company and HIO with the agreement being subject to the restrictions and limitations associated with the out-license agreement signed between the Company and Xisle. In addition, HIO will be responsible for commercialization with milestone and royalty payments to be paid back to the Company upon successful product development through to commercialization.

### **SELECTED FINANCIAL INFORMATION AND SUMMARY OF QUARTERLY RESULTS**

Net loss and total comprehensive loss, over the last eight quarters, has ranged from a high of \$2,564,000 in fiscal Q2 2018 to a low of \$1,379,000 in fiscal Q1 of 2019 with fluctuations mainly dependant on the availability of cash reserves and the resulting impact on research and development activities and operating, general and administration expenses.

From a research and development spending perspective, the Company's L-DOS47 clinical studies in NSCLC have been in the later stages of patient enrollment while the Company prepared for a new IND clinical study in previously treated advanced pancreatic cancer patients, which was just approved by the FDA in August of 2019 and therefore reflects the overall lower research and developments spend. Operating and general expenditures after the Company's cost reduction initiatives in late fiscal 2017 and early 2018 have now leveled off on a year-to-year basis with some slight fluctuations quarterly. For example, in fiscal Q4 2019, the Company granted stock options resulting in stock-based compensation expenses and paid bonuses to the Company's CEO and CFO resulting in higher fiscal Q4 2019 operating, general and administrative expenses.

The Company closed several private placements in fiscal 2019 for gross proceeds of approximately \$6,522,000 (2018 - \$8,518,000).

The following table depicts selected annual data from continuing operations for the fiscal years ended July 31:

	2019	2018	2017
Research and development expense	\$ 5,006,000	\$ 6,084,000	\$ 6,524,000
Operating, general and administration expense	\$ 2,486,000	\$ 2,462,000	\$ 3,738,000
Net loss and total comprehensive loss	\$ (7,526,000)	\$ (8,625,000)	\$ (10,059,000)
Deficit, end of year	\$ 171,531,000	\$ 164,005,000	\$ 155,380,000
Basic and diluted loss per common share	\$ 0.07	\$ 0.09	\$ 0.11
Weighted average number of common shares	106,645,801	99,928,708	91,797,627
Cash	\$ 206,000	\$ 366,000	\$ 897,000
Working capital / (deficiency)	\$ (3,534,000)	\$ (1,901,000)	\$ (504,000)
Total assets	\$ 940,000	\$ 1,147,000	\$ 2,187,000

The following table depicts selected quarterly data from continuing operations for the fiscal year ended July 31, 2019:

	Q4	Q3	Q2	Q1
Research and development	\$ 1,311,000	\$ 1,351,000	\$ 1,330,000	\$ 1,014,000
Operating, general and administration	\$ 881,000	\$ 699,000	\$ 533,000	\$ 373,000
Net loss and total comprehensive loss	\$ (2,168,000)	\$ (2,071,000)	\$ (1,908,000)	\$ (1,379,000)
Basic and diluted loss per common share	\$ (0.02)	\$ (0.02)	\$ (0.02)	\$ (0.01)
Weighted average number of common shares	106,645,801	106,939,164	105,086,590	103,646,025
Cash	\$ 206,000	\$ 938,000	\$ 306,000	\$ 871,000
Working Capital / (deficiency)	\$ (3,534,000)	\$ (2,203,000)	\$ (1,998,000)	\$ (1,997,000)

The following table depicts selected quarterly data from continuing operations for the fiscal year ended July 31, 2018:

	Q4	Q3	Q2	Q1
Research and development	\$ 990,000	\$ 1,435,000	\$ 1,895,000	\$ 1,764,000
Operating, general and administration	\$ 606,000	\$ 686,000	\$ 644,000	\$ 526,000
Net loss and total comprehensive loss	\$ (1,611,000)	\$ (2,147,000)	\$ (2,564,000)	\$ (2,303,000)
Basic and diluted loss per common share	\$ (0.02)	\$ (0.02)	\$ (0.03)	\$ (0.02)
Weighted average number of common shares	99,928,708	99,280,711	98,461,495	96,860,911
Cash	\$ 366,000	\$ 770,000	\$ 1,641,000	\$ 3,175,000
Working Capital / (deficiency)	\$ (1,901,000)	\$ (1,915,000)	\$ (263,000)	\$ 1,674,000

## RESULTS FROM OPERATIONS

### *Net loss and total comprehensive loss from continuing operations*

The Company recorded a net loss and total comprehensive loss of \$7,526,000 (\$0.07 loss per common share) and \$8,625,000 (\$0.09 loss per common share) for the fiscal years ended 2019 and 2018, respectively.

### *Research & development*

Research and development costs for fiscal 2019 and 2018 totalled \$5,006,000 and \$6,084,000, respectively.

The following table outlines research and development costs expensed and investment tax credits for the Company's significant research and development projects for the fiscal years ended July 31:

	2019	2018
L-DOS47	\$ 3,530,000	\$ 4,893,000
V-DOS47	478,000	457,000
CAR-T	333,000	318,000
Corporate research and development expenses	528,000	432,000
Trademark and patent related expenses	435,000	440,000
Stock-based compensation expense	198,000	10,000
Depreciation expense	109,000	141,000
Research and development investment tax credit	(126,000)	(132,000)
Polish government grant subsidy (V-DOS47)	(479,000)	(475,000)
	\$ 5,006,000	\$ 6,084,000

L-DOS47 research and development expenses for fiscal 2019 totalled \$3,530,000 (2018 - \$4,893,000). L-DOS47 research and development expenditures relate primarily to the Company's LDOS001 Phase I clinical study in the U.S., the LDOS002 European Phase I/II clinical study in Poland, the LDOS003 Phase II clinical study in Poland and the Ukraine and the Company's newly approved Phase Ib/II clinical study in the U.S..

The Company's overall reduction in research and development spend when compared to the previous fiscal year is the result of the Company's NSCLC studies (LDOS001 and LDOS002) all being in the late stage of development within their respective clinical phases while at the same time, the Company starts ramping up activity of its newly approved IND clinical study for previously treated advanced pancreatic cancer (LDOS006).

The supporting L-DOS47 expenditures include costs associated with the Company's research laboratory in Edmonton, Alberta which includes employee wages and benefits, fixed overhead costs such as rent, light, heat, water and variable costs such as laboratory consumables. Also included are costs associated with the manufacture of L-DOS47 drug substance/product and related assays from third party suppliers and costs associated with running and managing the L-DOS47 clinical trials in the various

geographic jurisdiction. These include wages and benefits of employees involved in overseeing third-party vendors who monitor the trials on behalf of the Company in addition to all patient clinical study costs incurred at the various clinics where patients are being dosed.

V-DOS47 research and development expenses for fiscal 2019 totalled \$478,000 (2018 - \$457,000). Research and development expenditures in the program remained flat when compared to fiscal 2018. The Company's Polish subsidiary entered into a grant funding agreement with the PNCRD for research and development expenditures associated with V-DOS47. The V-DOS47 expenditures include costs associated with the Company's research laboratory in Warsaw, Poland which includes employee wages and benefits, fixed overhead costs such as rent, light, heat, water and variable costs such as laboratory consumables. In fiscal 2019, the Company's Polish subsidiary received grant funding of \$479,000 (2018 - \$475,000). The grant funds received by the Company's Polish subsidiary are offset against the eligible research and development expenditures associated with the V-DOS47 program. Subsidized amounts may be drawn in advance or on a reimbursement basis, with varying criteria and timelines for justification of claims being made by the Company's Polish subsidiary. The Agreement may be terminated by either party upon one month's written notice clearly spelling out the reasons for which the Agreement is being terminated. In certain cases of termination, the Subsidiary may be obligated to return the received financial support in full within fourteen days of the day notice is served, with interest. As at July 31, 2019, the Company has received subsidies from the PNCRD of approximately \$1,289,000.

CAR-T research and development expenses for fiscal 2019 totalled \$333,000 (2018 - \$318,000). The Company commenced development of novel CAR-T therapeutics and new antibody-based technologies for cell-based therapies. The Company's CAR-T expenditures relate primarily to collaborative research activities with ProMab Biotechnologies Inc.

Corporate research and development expenses for fiscal 2019 totalled \$528,000 (2018 - \$432,000). The increase in corporate research and development expenditures mainly represents a bonus payout to the Chief Executive Officer.

Trademark and patent related expenses for fiscal 2019 totalled \$435,000 (2018 - \$440,000). The Company continues to ensure it adequately protects its intellectual property.

### ***Operating, general and administration***

Operating, general and administration expenses for fiscal 2019 totalled \$2,486,000 (2018 - \$2,462,000). Operating, general and administration expenses remained relatively flat. The Increase in wages and benefits and stock-based compensation were offset by a reduction in lower director fees and other general and administrative expenditures. The increase in wages & benefits and stock-based compensation is the result of a bonus payout to the CFO and stock options granted to administrative employees and non-management directors. The reduction in director fees reflects a reduction in committee and board meetings held as well as a reduction in the number of directors on the board of the company. Limited working capital throughout the year resulted in reductions in other general and administrative spending activity.

The following table outlines operating, general and administration costs expensed for the following periods:

	2019	2018
Wages & benefits	\$ 759,000	\$ 665,000
Director fees	162,000	214,000
Third-party advisors	1,068,000	1,089,000
Other general and administrative	316,000	468,000
Stock-based compensation expense	164,000	-
Depreciation expense	17,000	26,000
	<b>\$ 2,486,000</b>	<b>\$ 2,462,000</b>

### **CRITICAL ACCOUNTING ESTIMATES**

The preparation of financial statements in conformity with IFRS requires management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets and liabilities, revenue and expenses and the related disclosures of contingent assets and liabilities and the determination of the Company's ability to continue as a going concern. Actual results could differ materially from these estimates and assumptions. The Company reviews its estimates and underlying assumptions on an ongoing basis. Revisions are recognized in the period in which the estimates are revised and may impact future periods.

The areas involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the Company's financial statements have been set out in Note 1 of the Company's audited consolidated financial statements for the fiscal year ended July 31, 2019.

## SIGNIFICANT ACCOUNTING POLICIES

The significant accounting policies used in preparing the Company's consolidated financial statements are described in Note 2 of the Company's audited consolidated financial statement for the fiscal year ended July 31, 2019, except for those related accounting policies and methods of computation related to any new accounting standards and pronouncements.

## NEW ACCOUNTING STANDARDS AND PRONOUNCEMENTS NOT YET ADOPTED

New accounting standards and pronouncements issued but not yet effective up to the date of issuance of the Company's consolidated financial statements are listed below. This listing includes standards and interpretations issued, which the Company reasonably expects to be applicable at a future date. The Company intends to adopt those standards when they become effective. Certain pronouncements have been issued by the IASB or International Financial Reporting Interpretations Committee. Many of these updates are not applicable or are inconsequential to the Company and have been excluded from the discussion below:

### ***New accounting standards***

#### *IFRS 9 Financial Instruments*

Effective August 1, 2018, the Company adopted IFRS 9 Financial Instruments (IFRS 9) which replaced IAS 39, Financial Instruments: Recognition and Measurement (IAS 39). IFRS 9 includes revised guidance on the classification and measurement of financial assets and liabilities; new guidance for measuring impairment on financial assets; and new hedge accounting guidance.

On adoption of IFRS 9, the Company has classified the financial assets and financial liabilities held at August 1, 2018, based on the new classification requirements and the characteristics of each financial instrument as at the transition date. The new classification did not require a restatement of prior periods.

#### *IFRS 15 Revenue from Contracts with Customers*

The Company currently has no revenue stream as it is still in the research and development stage. As it evolves out of that stage, the Company will have a closer look at how this standard will impact how it recognizes revenue.

### ***Future accounting standards***

New accounting standards and pronouncements issued but not yet effective up to the date of issuance of the Company's consolidated financial statements are listed below. This listing includes standards and interpretations issued, which the Company reasonably expects to be applicable at a future date. The Company intends to adopt those standards when they become effective.

Certain pronouncements have been issued by the IASB or International Financial Reporting Interpretations Committee. Many of these updates are not applicable or are inconsequential to the Company and have been excluded from the discussion below:

#### *IFRS 16, Leases*

In January 2016, the IASB has issued IFRS 16 *Leases* ("IFRS 16"), its new leases standard that requires lessees to recognize assets and liabilities for most leases on their balance sheets. Lessees applying IFRS 16 will have a single accounting model for all leases, with certain exemptions. Lessor accounting is substantially unchanged. The new standard will be effective from January 1, 2019 with limited early application permitted. The Company is evaluating the impact of the new standard on its results of operations, financial position and disclosures.

## LIQUIDITY AND CAPITAL RESOURCES

Since inception, the Company has mainly relied on financing its operations from public and private sales of equity. The Company does not have any credit facilities and is therefore not subject to any externally imposed capital requirements or covenants. The Company manages its liquidity risk by continuously monitoring forecasts and actual cash flow from operations and anticipated investing and financing activities.

The Company reported a consolidated net loss and total comprehensive loss of \$7,526,000 for fiscal 2019 (2018 - \$8,625,000). As at July 31, 2019 the Company had a working capital deficiency of \$3,534,000 (2018 - \$1,901,000), shareholders' deficiency of \$3,281,000 (2018 - \$1,527,000) and a deficit of \$171,531,000 (2018 - \$164,005,000).

In order for the Company to advance its various currently planned preclinical and clinical research and development activities and pay for its overhead costs, the Company will need to raise approximately \$20,000,000 to \$25,000,000. The Company is projecting average monthly fixed overhead costs of approximately \$425,000 per month. This amount does not include the costs related to any of the Company's third-party activities such as clinical studies, collaborative research activities and contract manufacturing.

The Company currently has several clinical studies (see *Clinical Study Initiatives* above for details) in various stages of development.

Due to slow enrollment, the Company stopped LDOS001 enrollment in July 2019 with the final cohort enrolling two patients rather than the planned three patients. The Company expect to have a final clinical study report no later than the first calendar quarter

of 2020 and is forecasting a cost of approximately \$627,000 to complete. The Company's LDOS002 clinical study is complete and the Company is currently awaiting the finalized clinical reports. The Company previously forecasted LDOS003 as a large randomized study. The Company has concluded that it would not move forward with the randomized portion of the study unless certain clinical objectives are met in the does escalation phase and sufficient capital is obtained, or the Company enters into a co-development partnership with a third party. As a result, the Company is now forecasting the non-randomized portion of the study to cost approximately \$1,028,000 and to be completed by first calendar quarter of 2020.

The Company recently received IND approval by the FDA to conduct a Phase Ib/II study (LDOS006) in the U.S., L-DOS47 in combination with doxorubicin, for previously treated advanced pancreatic cancer. The Company forecasting a cost of approximately \$6,400,000 in order to fully complete the study, which is projected to be some time by the end of calendar 2021.

In support of the clinical study programs, the Company will need to manufacture drug product. The Company originally determine that it would likely need an entire new manufacturing batch but has since determine that a current batch could be repurposed at a cost of approximately \$1,640,000 which includes all assay development and stability studies. The manufactured batch is expected to be available, at the latest, by the fourth quarter of calendar 2020.

The Company is currently forecasting to spend approximately \$90,000 in collaborative research initiatives with the Moffit Cancer Centre and is assessing additional collaborations.

As for the Company's V-DOS47 preclinical program in Poland, the Company is committed to spending approximately \$5,266,000 of which a portion of these costs, approximately \$2,543,000 are to be reimbursed from PNCRD government subsidies. The Company previously disclosed that it was looking to dispose of its ownership position in its Polish subsidiary while retaining licensing agreement for future milestones and royalty payments. More recently, as part of a financing on August 21, 2019 for gross proceeds of \$7,000,005, the Company disposed 25% of its investment in its Polish subsidiary. As part of the Company's plan to divest of its Polish subsidiary, the Company is looking at its Polish subsidiary to raise capital, to fund the CAR-T program.

The Company raised gross proceeds of approximately \$6,522,000 in fiscal 2019. The Company's cash reserves of \$206,000 as at July 31, 2019 in addition to the subsequent private placements the Company closed on August 21, 2019 for gross proceeds of approximately \$7,000,005 are insufficient to meet anticipated cash needs for working capital and capital expenditures through the next twelve months, and nor are they sufficient to see planned research and development initiatives through to completion. Though the funds raised have assisted the Company in dealing with its working capital deficiency, additional funds are required to advance the Company's clinical and preclinical programs and deal with working capital requirements. To the extent that the Company does not believe it has sufficient liquidity to meet its current obligations, management considers securing additional funds, primarily through the issuance of equity securities of the Company, to be critical for its development needs.

The Company's long-term liquidity depends on its ability to raise funds from various sources, which depends substantially on the success of its ongoing research and development programs, economic conditions and the state of the biotech industry. Accessing the capital markets can be particularly challenging for companies that operate in the biotechnology industry. The Company has predominately raised funds utilizing the services of ACM Alpha Consulting Management. While the Company has been able to raise equity financing in recent years, there can be no assurance that additional funding by way of equity financing will continue to be available. Any additional equity financing, if secured, would result in dilution to the existing shareholders and such dilution may be significant. The Company may also seek additional funding from or through other sources, including technology licensing, co-development collaborations, mergers and acquisitions, joint ventures, and other strategic alliances, which, if obtained, may reduce the Company's interest in its projects or products or result in significant dilution to existing shareholders. The Company may also seek additional funding from government grants. The Company is also assessing the possibility of a Nasdaq listing in order to reach the U.S. capital markets for funding. There can be no assurance, however, that any alternative sources of funding will be available. The failure of the Company to obtain additional financing on a timely basis may result in the Company reducing, delaying or cancelling one or more of its planned research, development and/or marketing programs, including clinical trials, further reducing overhead, or monetizing non-core assets, any of which could impair the current and future value of the business or cause the Company to consider ceasing operations and undergoing liquidation.

Given the Company's conclusion about the insufficiency of its cash reserves, significant doubt may be cast about the Company's ability to continue operating as a going concern. The continuation of the Company as a going concern for the foreseeable future depends mainly on raising sufficient capital, and in the interim, reducing, where possible, operating expenses (including making changes to the Company's research and development plans), including the delay of one or more of the Company's research and development programs, further reducing overhead and the possible disposition of assets.

The Company had a total number of 111,225,501 common shares issued and outstanding as at July 31, 2019 (July 31, 2018 – 102,809,579 common shares).

## RELATED PARTY TRANSACTIONS

The following table summarizes key management personnel compensation for the fiscal years ended:

	2019	2018
Compensation	\$ 767,000	\$ 695,000
Stock-based compensation	291,000	–
	\$ 1,058,000	\$ 695,000

An amount of \$225,000 was advanced to the Company by an officer. The advance is interest bearing at 4% per annum and is repayable, on demand, no later than August 30, 2019. The principle amount along with interest, was repaid, as per terms. The advance is included in accruals as at July 31, 2019.

The following table summarizes non-management directors' compensation for the fiscal years ended:

	2019	2018
Directors' fees	\$ 162,000	\$ 212,000
Stock-based compensation	24,000	–
	\$ 186,000	\$ 212,000

The following table summarizes the total compensation for both ACMest and ACMag for the fiscal years ended:

	2019	2018
Finder's fee commissions	\$ 940,000	\$ 1,065,000
Investor relations consulting fee	571,000	516,000
	\$ 1,511,000	\$ 1,581,000

The Company has agreements with both ACM Alpha Consulting Management EST ("ACMest") and ACM Alpha Consulting Management AG ("ACMag"). The agreements are both effective July 2, 2018 and can be terminated upon ninety days notice. Mr. Kandziora is President of ACMest and acted as Observer on the Board of Directors of the Company up until August 22, 2019 in addition to also being on the Supervisory Board of the Company's Polish subsidiary, Helix Immuno-Oncology S.A. Mrs. Kandziora is President of ACMest and was Corporate Secretary up until August 22, 2019.

Related party transactions are at arm's length and recorded at the amount agreed to by the related parties.

## FINANCIAL INSTRUMENTS

### *Fair value hierarchy*

Financial instruments recorded at fair value on the balance sheet are classified using a fair value hierarchy that reflects the significance of the inputs used in making the measurements. The fair value hierarchy has the following levels:

- Level 1 reflects valuation based on quoted prices observed in active markets for identical assets or liabilities;
- Level 2 reflects valuation techniques based on inputs that are quoted prices of similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; inputs other than quoted prices used in a valuation model that are observable for that instrument; and inputs that are derived principally from or corroborated by observable market data by correlation or other means; and
- Level 3 reflects valuation techniques with significant unobservable market inputs.

A financial instrument is classified to the lowest level of the hierarchy for which a significant input has been considered in measuring fair value. The financial instrument in the Company's financial statements, measured at fair value, is cash.

### *Fair value*

The fair value of financial instruments as at July 31, 2019 and July 31, 2018 approximates their carrying value because of the near-term maturity of these instruments.

## INTELLECTUAL PROPERTY

Patents and other proprietary rights are very valuable to the Company, even though the patent positions of biotechnology companies may be uncertain and involve complex legal and factual issues. The Company has no assurance that any of its patent applications will result in the issuance of any patents. Even issued patents may not provide the Company with a competitive advantage against competitors with similar technologies, or who have designed around the Company's patents. Furthermore, the

Company's patents may be struck down if challenged. Intellectual property laws do not protect intellectual property to the same extent from one country to another.

Because of the substantial length of time and expense associated with developing new products, the pharmaceutical, medical device, and biotechnology industries place considerable importance on obtaining patent protection for new technologies, products, and processes. The Company's policy is to file patent applications to protect inventions, technology, and improvements that are important to the development of our business and with respect to the application of our products and technologies to the treatment of a number of disease indications. The Company's policy also includes regular reviews related to the development of each technology and product in light of its intellectual property protection, with the goal of protecting all key research and developments by patent.

The Company seeks intellectual property protection in various jurisdictions around the world and owns patents and patent applications relating to products and technologies in the United States, Canada, Europe and other jurisdictions. The scope and duration of our intellectual property rights vary from country to country depending on the nature and extent of our intellectual property filings, the applicable statutory provisions governing the intellectual property, and the nature and extent of our legal rights. The Company will continue to seek intellectual property protection as appropriate and require our employees, consultants, outside scientific collaborators, and sponsored researchers to enter into confidentiality agreements with us that contain assignment of invention clauses outlining ownership of any intellectual property developed during the course of the individual's relationship with us.

### ***DOS47, L-DOS47 and V-DOS47***

The Company currently owns two U.S. patents in respect of the DOS47 technology, and also has also licensed patent rights from the NRC for the antibody component of L-DOS47. With respect to non-U.S. patents, the Company owns 52 DOS47 related patents in other jurisdictions with a number of patent applications in countries around the world. The Company has recently filed a joint patent application in the U.S. with Amorfix to cover the antibody-DOS47 conjugates derived from their collaboration. A new U.S. patent application to cover new features of the DOS47 technology was filed by the Company during fiscal 2013. During January 2015, an additional U.S. patent application covering specific L-DOS47 manufacturing and novel features was filed. During fiscal 2017, a new U.S. patent application protecting the novel use of L-DOS47 in restoring T cell function for therapeutic application was filed. In addition, two US patents covering anti-VEGFR2 antibodies and their use in DOS47 conjugates (V-DOS4) were filed.

### ***Cell Based Therapy***

The company has recently filed a joint patent application with NRC to protect the use of an antibody for use in cell-based therapies. In addition, the company has also filed new patent application covering the use of anti-VEGFR2 antibodies in cell-based therapy in July 2017. The Company is currently in discussion with third parties to license additional intellectual properties to strengthen the company's portfolio.

## **OFF-BALANCE SHEET ARRANGEMENTS**

The Company has no material off-balance sheet arrangements.

## **SUBSEQUENT EVENT**

On August 21, 2019, the Company completed a private placement financing of 13,725,500 units of the Company and the disposition of a 25% stake of its Polish subsidiary for \$7,000,005. Each unit comprises one common share and one common share purchase warrant. Each common share purchase warrant will entitle the holder to purchase one common share at an exercise price of \$0.72 and will have an expiry of five years from the date of issuance.

## **TABULAR DISCLOSURE OF CONTRACTUAL OBLIGATIONS**

The Company's commitments are summarized as follows:

	2020	2021	2022	2023	2024	2025 and beyond	Total
V-DOS47 co-funded project <sup>(1)</sup>	\$ 1,365,000	\$ 2,382,000	\$ 1,163,000	\$ 356,000	\$ –	\$ –	\$5,266,000
Clinical research organizations <sup>(2)</sup>	452,000	–	–	–	–	–	452,000
Royalty and in-licensing <sup>(3)</sup>	20,000	20,000	20,000	20,000	20,000	60,000	160,000
Financial & investor relations <sup>(4)</sup>	131,000	–	–	–	–	–	131,000
Collaborative research organizations <sup>(5)</sup>	88,000	–	–	–	–	–	88,000
Facility leases <sup>(6)</sup>	66,000	–	–	–	–	–	66,000
Contract manufacturing organizations <sup>(7)</sup>	17,000	–	–	–	–	–	17,000
	\$ 2,139,000	\$ 2,402,000	\$ 1,183,000	\$ 376,000	\$ 20,000	\$ 60,000	\$6,180,000

- (1) PNCRD V-DOS47 co-funding program. Subsidized amounts may be drawn in advance or on a reimbursement basis, with varying criteria and timelines for justification of claims being made by the Company's subsidiary. Of the \$5,266,000 in total future commitments towards this program, the Company is projecting that a total of approximately \$2,543,000 will be reimbursed by the PNCRD. The Agreement may be terminated by either party upon one month's written notice clearly spelling out the reasons for which the Agreement is being terminated. In certain cases of termination, the Subsidiary may be obligated to return the received financial support in full within fourteen days of the day notice is served, with interest. As at July 31, 2019, the Company has received subsidies from the PNCRD of approximately \$1,289,000.
- (2) The Company has Clinical Research Organization supplier agreements in place for clinical research services related to the management of the Company's clinical stage programs.
- (3) Represents future minimum royalties.
- (4) The Company amended a financial advisory agreement effective July 2, 2018 which includes a termination clause which requires a ninety-day written notice (also see *RELATED PARTY TRANSACTIONS* section above).
- (5) The Company has Collaborative Research Organization supplier agreements relating to its L-DOS47 program.
- (6) The Company is committed to pay \$66,000 under three facility lease agreements with lease terms up to 12 months.
- (7) The Company has Contract Manufacturing Organization supplier agreements related to its L-DOS47 program, all of which are inter-dependant with the manufacturing of L-DOS47.

## QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The Company's main objectives when managing capital are to ensure sufficient liquidity to finance research and development activities, clinical trials, ongoing administrative costs, working capital and capital expenditures. The Company includes cash and components of shareholders' equity, in the definition of capital. The Company endeavours not to unnecessarily dilute shareholders when managing the liquidity of its capital structure.

### Currency risk

The Company operates internationally and is exposed to foreign exchange risks from various currencies, primarily the Euro and U.S. dollar. Foreign exchange risks arise from the foreign currency translation of the Company's integrated foreign operation in Poland. In addition, foreign exchange risks arise from purchase transactions, as well as recognized financial assets and liabilities denominated in foreign currencies.

Balances in foreign currencies at July 31:

	2019			2018		
	Euros	US Dollars	Zloty	Euros	US Dollars	Zloty
Cash	–	–	330,000	33,000	–	241,000
Accounts receivable	–	–	143,000	–	–	126,000
Accounts payable	(401,000)	(563,000)	(232,000)	(412,000)	(334,000)	(299,000)
Accruals	(25,000)	–	(107,000)	–	(63,000)	(69,000)
Net foreign currencies	(426,000)	(563,000)	(134,000)	(379,000)	(397,000)	(1,000)
Closing exchange rate	1.4627	1.3148	0.3413	1.5239	1.3017	0.3568
Impact of 1% change in exchange rate	+/- 6,000	+/- 7,000	+/-nil	+/- 6,000	+/- 5,000	+/-nil

Any fluctuation in the exchange rates of the foreign currencies listed above could have an impact on the Company's results from operations; however, they would not impair or enhance the ability of the Company to pay its foreign-denominated expenses.

### Credit risk

Credit risk is the risk of a financial loss to the Company if a customer or counterparty to a financial instrument fails to meet its contractual obligation.

The table below breaks down the various categories that make up the Company's accounts receivable balances as July 31:

	2019	2018
Government related – HST/VAT	\$ 82,000	\$ 73,000
Research and development investment tax credits	121,000	233,000
Other	87,000	9,000
	\$ 290,000	\$ 315,000

### ***Interest rate risk***

Interest rate risk is the risk that future cash flows of a financial instrument will fluctuate because of changes in interest rates, which are affected by market conditions. The Company is exposed to interest rate risk arising from fluctuations in interest rates received on its cash. The Company does not have any credit facilities and is therefore not subject to any debt related interest rate risk.

The Company manages its interest rate risk by maximizing the interest income earned on excess funds while maintaining the liquidity necessary to conduct its operations on a day-to-day basis. Any investment of excess funds is limited to risk-free financial instruments. Fluctuations in the market rates of interest do not have a significant impact on the Company's results of operations due to the relatively short-term maturity of any investments held by the Company at any given point in time and the low global interest rate environment. The Company does not use derivative instruments to reduce its exposure to interest rate risk.

### ***Liquidity risk***

Liquidity risk is the risk that the Company will not be able to meet its obligations as they come due.

Since inception, the Company has mainly relied on financing its operations from public and private sales of equity. The Company does not have any credit facilities and is therefore not subject to any externally imposed capital requirements or covenants.

The Company manages its liquidity risk by continuously monitoring forecasts and actual cash flow from operations and anticipated investing and financing activities.

The Company's cash reserves of \$206,000 as at July 31, 2019 are insufficient to meet anticipated cash needs for working capital and capital expenditures through the next twelve months, nor are they sufficient to see the current research and development initiatives through to completion. To the extent that the Company does not believe it has sufficient liquidity to meet its current obligations, management considers securing additional funds primarily through equity arrangements to be of utmost importance.

The Company's long-term liquidity depends on its ability to access the capital markets, which depends substantially on the success of the Company's ongoing research and development programs, as well as economic conditions relating to the state of the capital markets generally. Accessing the capital markets is particularly challenging for companies that operate in the biotechnology industry.

## **OUTSTANDING SHARE DATA**

As at July 31, 2019, the Company had outstanding 111,225,501 common shares; warrants to purchase up to 43,372,897 common shares; and incentive stock options to purchase up to 4,875,000 common shares. As at July 31, 2018, the Company had outstanding 102,809,579 common shares; warrants to purchase up to 35,078,975 common shares; and incentive stock options to purchase up to 930,000 common shares.

## **DISCLOSURE CONTROLS AND PROCEDURES AND INTERNAL CONTROL OVER FINANCIAL REPORTING**

Management has designed the Company's disclosure controls and procedures to provide reasonable assurance that all relevant information is gathered, recorded, processed, summarized and reported to the Chief Executive Officer ("CEO") and the Chief Financial Officer ("CFO") of the Company so that appropriate decisions can be made within the time periods specified in securities legislation regarding public disclosure by the Company in its annual filings, interim filings or other documents or reports required to be filed or submitted by it under securities legislation.

Management has also designed internal controls over financial reporting ("ICFR") to provide reasonable assurance regarding the reliability of the Company's financial reporting and the preparation of financial statements for external purposes in accordance with IFRS. Because of its inherent limitations, ICFR can provide only reasonable assurance and may not prevent or detect misstatements. Further, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with policies or procedures may deteriorate.

### ***Material weakness previously disclosed but not yet remediated***

The termination of the Company's controller in fiscal 2017, whose position to this day has not been filled, resulted in a lack of resources and has in turn impacted segregation of duties associated with the financial close and reporting process.

As at July 31, 2019, management has evaluated the effectiveness of the Company's disclosure controls and procedures and ICFR and have concluded they are not effective due to the above noted area of concern.

Management has concluded and the board has agreed, that when taking into account the Company's size and financial resources, the Company does not have sufficient scale of resources to warrant the hiring of additional staff to address this concern at this time and, accordingly, that there is a material weakness in the design of the Company's ICFR that has the potential to result in

material misstatements in the Company's financial statements and that this should also be considered a weakness in the design and operating effectiveness of the Company's disclosure controls and procedures. This material weakness is considered to be a common area of deficiency for many smaller listed companies in Canada.

Although the CEO and CFO are not aware of the above deficiency having actually resulted in a material misstatement of a financial statement amount or disclosure, they have determined that, the deficiency could result in business and accounting practices that could put both the Company's reputation and its financial reporting at risk and lead to uncertainty whether control procedures are being carried out such that the Company's ICFR may fail to prevent or detect a material misstatement of a financial statement amount or disclosure on a timely basis or fail to disclose material information required to be disclosed under securities legislation within the time periods specified in securities legislation. However, there are several mitigating procedures and other factors which reduce the risk of a material misstatement in the financial statements, including substantive review of the financial statements by the Company's audit committee and day-to-day management involvement in operations and reporting.

## **RISKS AND UNCERTAINTIES**

Helix is subject to risks, events and uncertainties, or "risk factors", associated with being a publicly traded company operating in the biotechnology industry, with research and development stage projects in pre-clinical discovery and clinical development and with no expectation of revenue or profits in the foreseeable future and, as such, is heavily dependant on raising sufficient capital on a timely bases in order to advance the Company's drug development programs. As a result of these risk factors, reported information and forward-looking information may not necessarily be indicative of future operating results or of future financial position, and actual results may vary from the forward-looking information or reported information. The Company cannot predict all of the risk factors, nor can it assess the impact, if any, of such risk factors on the Company's business or the extent to which any factor, or combination of factors, may cause future results or financial position to differ materially from either those reported or those projected in any forward-looking information. Accordingly, reported financial information and forward-looking information should not be relied upon as a prediction of future actual results. Some of the risks and uncertainties affecting the Company, its business, operations and results which could cause actual results to differ materially from those reported or from forward-looking information include, either wholly or in part, those described elsewhere in this MD&A, as well as the following:

### ***The Company does not have any source of operating income and is dependent solely on outside sources of financing***

The Company's operations consist of research and development activities, which do not generate any revenue. Accordingly, the Company has no source of revenue, positive operating cash flow or operating earnings to subsidize its ongoing research and development and other operating activities and the ability of the Company to continue as a going concern is dependent upon the Company's ability to rely on cash on hand, and on outside sources of financing to fund its ongoing research and development and other operating activities. Such sources of financing involve risks, including that the Company will not be able to raise such financing on terms satisfactory to the Company or at all, and that any additional equity and/or any convertible debt financing, if secured, would result in dilution to existing shareholders, and that such dilution may be significant. While the Company has been able to raise equity financing in recent years, there can be no assurance that additional funding by way of equity financing will continue to be available. Any additional equity and/or debt financing, if secured, would result in dilution to the existing shareholders and such dilution may be significant. The Company may also seek additional funding from or through other sources, including technology licensing, co-development collaborations, mergers and acquisitions, joint ventures, and other strategic alliances, which, if obtained, may reduce the Company's interest in its projects or products or result in significant dilution to existing shareholders. The Company may also seek additional funding from government grants. There can be no assurance, however, that any alternative sources of funding will be available. The failure of the Company to obtain additional financing on a timely basis may result in the Company reducing, delaying or cancelling one or more of its planned research and development programs, including clinical trials, further reducing overhead, or monetizing non-core assets, any of which could impair the current and future value of the business or cause the Company to consider ceasing operations and undergoing liquidation. Given the Company's conclusion about the insufficiency of its cash reserves, significant doubt may be cast about the Company's ability to continue operating as a going concern. The continuation of the Company as a going concern for the foreseeable future depends mainly on raising sufficient capital, and in the interim, reducing, where possible, operating expenses (including making changes to the Company's research and development plans), including the delay of one or more of the Company's research and development programs, further reducing overhead and the possible disposition of assets.

### ***The Company has a history of losses and expects to continue to incur additional losses for the foreseeable future***

The Company's primary focus continues to be on its research and development of drug product candidates. The research and development of drug product candidates require the expenditure of significant amounts of cash over a relatively long-time period. The Company expects to continue to incur losses from continuing operations, for the foreseeable future. The Company's cumulative deficit as at July 31, 2019 is \$171,531,000. There can be no assurance that the Company will record earnings in the future.

### ***The Company requires additional funding***

The Company's cash reserves will not be sufficient for the Company to fully fund the Company's ongoing research and development programs, operating activities, working capital or capital expenditures for the next twelve months. The Company has no sources of external liquidity, such as a bank loan or line of credit. The Company is therefore in need of additional equity and/or debt financings in order to fund its ongoing research and development programs and other operating expenses for the foreseeable future.

The failure of the Company to obtain additional financing on a timely basis may result in the Company reducing, delaying or cancelling one or more of its planned research and development, including any clinical trials, further reducing overhead, or monetizing non-core assets, any of which could impair the current and future value of the business or cause the Company to consider ceasing operations and undergoing liquidation.

### ***The Company faces risks in connection with competition and technological change;***

The biotechnology industry is subject to rapid and substantial technological change. Technological competition from pharmaceutical companies, biotechnology companies and university researchers is intense and is expected to continue to be intense.

The rapid advancement of immunotherapies has and likely will continue to significantly change the treatment of cancer and may result in a reduction, which may be significant, in the potential patient population and/or treatment protocols available to chemotherapies and other treatments currently in development, such as the Company's primary drug product candidate, L-DOS47. Developments in immunotherapies have resulted in the Company repositioning its L-DOS47 lead drug product candidate away from a front-line monotherapy protocol towards second and third-line combination therapies with existing chemotherapy drugs and possibly in combination with immunotherapies resulting in additional expenditures and delays in previously anticipated development timelines for L-DOS47. Advancements in technology can impact the Company at any time and as such, any further repositioning, would likely result in additional expenses being incurred by the Company and in further delays in the anticipated development timeline for L-DOS47, or in the Company determining that its L-DOS47 drug product candidate is no longer viable. The Company is currently heavily dependent on the success of its lead drug product candidate L-DOS47 which is the only drug candidate currently in clinical development.

The Company cell-based therapies initiative may face significant hurdles. The Company's effort is mainly at research proof-of-concept stage. It is possible that the selected targets or choice of antibodies are not optimal. This can delay the initiation of formal preclinical and clinical development significantly. The Company has chosen to develop cell-based therapy for solid tumour. While there are many successful examples of cell-based therapy treatment in hematological malignancies, similar success in solid tumour is less certain.

Many of the Company's competitors have substantially greater financial, technical and human resources and significantly greater experience in conducting preclinical testing and human clinical trials of product candidates, scaling up manufacturing operations and obtaining regulatory approvals of products. Accordingly, the Company's varying competitors may succeed in obtaining regulatory approval for products more rapidly. The Company's ability to compete successfully will largely depend on:

- the efficacy and safety profile of our product candidates relative to marketed products and other product candidates in development;
- our ability to develop and maintain a competitive position in the product categories and technologies on which we focus;
- the time it takes for our product candidates to complete clinical development and receive marketing approval;
- our ability to obtain required regulatory approvals;
- our ability to commercialize any of our product candidates that receive regulatory approval;
- our ability to establish, maintain and protect intellectual property rights related to our product candidates; and
- acceptance of any of our product candidates that receive regulatory approval by physicians and other healthcare providers and payers.

Competitors have developed and may develop technologies that could be the basis for products that challenge the differentiated nature and potential for best-in-class product development programs and discovery research capabilities of the DOS47 platform technology. Some of those products may have an entirely different approach or means of accomplishing the desired therapeutic effect than our product candidates and may be more effective or less costly than our product candidates. The success of our competitors and their products and technologies relative to our technological capabilities and competitiveness could have a material adverse effect on the future preclinical studies and clinical trials of our product candidates, including our ability to obtain the necessary regulatory approvals for the conduct of such clinical trials. This may further negatively impact our ability to generate future product development programs with improved pharmacological properties.

With the recent FDA approval of pembrolizumab (Keytruda®) as first line treatment for NSCLC with PD-L1>1%, either as first line or in combination with carboplatin/pemetrexed, there is an urgent need for data to demonstrate the safety of L-DOS47 in combination with accepted standard chemotherapies, and also in combination with immunotherapies that are being offered with growing frequency. In addition, the rapidly evolving treatment landscape and growing prominence of immunotherapies, along with the infrequent use of vinorebine/cisplatin chemotherapy combination in the U.S., the potential relevance of data from the Company's LDOS003 study may be limited.

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 substantially suffer.

***The Company is conducting early stage research and development initiatives for products under development which may not be accepted by the market and may never generate revenue and the Company has limited sales, marketing and distribution experience***

The Company is conducting early stage research and development initiatives and is currently in the process of developing new products that require further time consuming and costly research and development. It will be a number of years, if ever, before its products in development begin to generate revenues, if at all. There can be no assurance that any of the drug product candidates will ever be successfully developed or commercialized.

Even with regulatory approval, the Company may not achieve market acceptance, which depends on a number of factors, including the establishment and demonstration in the medical community of the clinical utility of the Company's products, and their potential advantage over alternative treatment methods. There is also the risk that the actual market size or opportunity for the Company's drug candidates is not certain. Failure to gain market acceptance of either of the Company's products currently under development or an incorrect estimate in the nature and size of their respective markets could have a material adverse effect on the Company.

The Company has limited sales, marketing and distribution experience, and there is no assurance that the Company will be able to establish adequate sales, marketing, and distribution capabilities or make arrangements with any collaborators, strategic partners, licensees, or others to perform such activities, or that such efforts will be successful. The Company's objective for its drug candidate products is to enter into strategic alliances with appropriate pharmaceutical partners. There can be no assurance that any such strategic alliance will be maintained or achieved, or if achieved, that it will result in revenue to the Company.

***The timing of the Company's internal goals and projected timelines may not be met***

The Company sets internal goals for and makes public statements regarding its expected timing of meeting the objectives material to its success, including the commencement, duration and completion of clinical trials and anticipated regulatory approvals. The actual timing of these forward-looking events can vary dramatically due to a number of factors, including, without limitation, delays in scaling-up of drug product candidates, delays or failures in clinical trials, additional data requirements from the regulators, the Company failing to obtain required financing, and other risks referred to herein. Without limiting the generality of the foregoing, it is possible that required regulatory approvals may be delayed or denied, including those related to undertaking or continuing clinical trials, manufacturing of drug products, and marketing such products.

The Company has expressed certain estimated timelines for its European Phase I/II clinical trials for L-DOS47 in Poland, the U.S. Phase I study. The timeline for the European Phase I/II trials and any future timelines are contingent on the Company having adequate financing to complete the trials and the assumption that the trials will be completed according to the current schedules. A failure to obtain necessary financing or a change in the schedule of the trials (which may occur if certain cost-deferral measures are taken, or due to factors beyond the Company's reasonable control, such as scheduling conflicts, the occurrence of serious adverse events, interruption of supplies of study drugs, withdrawals of regulatory approvals, or slow patient recruitment) could delay their commencement or completion, or result in their suspension or early termination, which could have a material adverse effect on the Company.

***The Company faces intellectual property risks, including the loss of patent protection, the potential termination of licences, the inability to protect proprietary property, and possible claims of infringement against the Company or against a third-party from whom the Company licenses intellectual property***

The Company's success depends, in part, on its ability to secure and protect its intellectual property rights and to operate without infringing on the proprietary rights of others or having third parties circumvent the rights owned or licensed by the Company. However, the Company cannot predict the enforceability of its patents or its ability to maintain trade secrets that may not be protected by patents. Patent risks include the fact that patent applications may not result in issued patents, issued patents may be circumvented, challenged, invalidated or insufficiently broad to protect the Company's products and technologies; blocking patents by third parties could prevent the Company from using its patented technology; it may be difficult to enforce patent rights, particularly in countries that do not have adequate legal enforcement mechanisms, and enforcing such rights may divert management attention and may cause the Company to incur significant

expenses; and any expiry of an issued patent may negatively impact the underlying technology.

To protect its trade secrets, the Company enters into confidentiality undertakings with parties that have access to them, such as the Company's current and prospective distributors, collaborators, employees and consultants, but a party may breach the undertakings and disclose the Company's confidential information or competitors might learn of the information in some other way, which could have a material adverse effect on the Company.

The Company uses processes, technology, products, or information, the rights to certain of which are owned by others, such as a license from the NRC of the lung antibody used by the Company for L-DOS47. Termination or expiry of any licenses or rights during critical periods, and an inability to obtain them on commercially favourable terms or at all could have a material adverse effect on the Company and its drug candidates' development.

The Company operates in an industry that experiences substantial litigation involving the manufacture, use and sale of new products that are the subject of conflicting proprietary rights. The Company or one or more of its licensors may be subject to a claim of infringement of proprietary rights by a third party. It is possible that the Company's products and technologies do infringe the rights of third parties, and the Company or such licensor could incur significant expenses, and diversion of management attention, in defending allegations of infringement of proprietary rights, even if there is no infringement. Furthermore, the Company or such licensors may be required to modify its products or obtain licenses for intellectual property rights as a result of any alleged proprietary infringement. The inability to modify products or obtain licenses on commercially reasonable terms, in a timely manner or at all, could adversely affect the Company's business.

***The Company faces research and development risks, including the need to prove the Company's drug candidates are safe and effective in clinical trials***

The Company's drug candidates are complex compounds and the Company faces difficult challenges in connection with the manufacture of clinical batches of each of them, which could further delay or otherwise negatively affect the Company's planned clinical trials, or required regulatory approvals.

There is also the risk that the Company could obtain negative findings or factors that may become apparent during the course of research or development. The results from preclinical and clinical trials may not be predictive of results obtained in any ongoing or future clinical trials. A number of companies in the biotechnology and pharmaceutical industry have suffered significant setbacks in advanced clinical trials, even after achieving promising results in earlier trials and pre-clinical trials.

The timing and success of the Company's clinical trials also depend on a number of other factors, including, but not limited to: (a) obtaining additional financing, which is not assured; (b) sufficient patient enrolment, which may be affected by the incidence of the disease studied, the size of the patient population, the nature of the protocol, the proximity of patients to clinical sites, the eligibility criteria for a patient to participate in the study and the rate of patient drop-out; (c) regulatory agency policies regarding requirements for approval of a drug, including granting permission to undertake proposed human testing; (d) the Company's capacity to produce sufficient quantities and qualities of clinical trial materials to meet the trial schedule; (e) performance by third parties, on whom the Company relies to carry out its clinical trials; and (f) the approval of protocols and/or protocol amendments.

Clinical trials are complex, expensive and uncertain, and have a high risk of failure, which can occur at any stage. Data obtained from pre-clinical and clinical trials may be interpreted in different ways, or be incorrectly reported, which could delay or prevent further development of the drug candidate studied. Failure to complete clinical trials successfully and to obtain successful results on a timely basis could have a material adverse effect on the Company.

Even if the Company's drug candidates successfully complete the clinical trials and receive the regulatory approval necessary to market the drug candidates to the public, there is also the risk of unknown side effects, which may not appear until the drug candidates are on the market and may result in delay or denial of regulatory approval or withdrawal of previous approvals, product recalls or other adverse events, which could materially adversely affect the Company.

While the Company continues to explore opportunities to expand its drug product pipeline with new DOS47-based therapeutics pending the identification of further tumour targeting agents, there can be no assurance that any such tumour targeting agents will be identified or that any new DOS47-based therapeutics will be developed.

***Difficulty in enrolling patients in the Company's clinical trials, could result in delays or cancellation of clinical trials***

As the Company's product candidates advance from preclinical testing to clinical testing, and then through progressively larger and more complex clinical trials, the Company will need to enroll an increasing number of patients that meet various eligibility criteria. There is significant competition for recruiting cancer patients in clinical trials, and the Company may be unable to enroll the patients it needs to complete clinical trials on a timely basis or at all. The factors that affect the Company's ability to enroll patients is largely uncontrollable and include, but are not limited to, the following:

- size and nature of the patient population;
- eligibility and exclusion criteria for the trial;
- design of the study protocol;
- competition with other companies for clinical sites or patients;
- the perceived risks and benefits of the product candidate under study;
- the patient referral practices of physicians; and
- the number, availability, location and accessibility of clinical trial sites.

***The Company is dependent on a number of third parties and the failure or delay in the performance of one of these third parties' obligations may adversely affect the Company***

The Company is dependent on third parties to varying degrees in virtually all aspects of its business, including without limitation, on contract research organizations, contract manufacturing organizations, clinical trial consultants, raw material suppliers, collaborative research consultants, regulatory affairs advisers, medical and scientific advisors, clinical trial investigators, business service providers and other third parties. Critical supplies may not be available from third parties on acceptable terms, or at all, including GMP grade materials. Service providers may not perform, or continue to perform, as needed, or be available to provide the required services on acceptable terms or at all. Any lack of or interruption in supplies of raw materials or services, or any change in supply or service providers or any inability to secure new supply or service providers, would have an adverse impact on the development and commercialization of the Company's products. For example, the Company has previously experienced delays in the manufacturing of both engineering and clinical batches of L-DOS47, which have in turn caused delays in the progression of its development program, and there may be further delays. The Company relies on a third party for its supply of urease and if the contract with the third-party urease supplier is terminated early, the Company will have to find a new supplier of urease, as well as a new manufacturer of bulk drug product for future clinical testing programs. There can be no assurance that a new supplier or manufacturer can be contracted in a timely manner or at all, and this could negatively impact the Company's development plans for L-DOS47.

With respect to L-DOS47, the Company is currently dependent on, in addition to third party suppliers, manufacturers and consultants, the NRC and its license to the Company of a lung cancer antibody in order to develop and commercialize L-DOS47. Early termination of the license with NRC would have a material adverse effect on the further development of L-DOS47 and may require the cessation of such development, which would have a material adverse effect on the Company.

Given the Company's lack of financing, expertise, infrastructure and other resources to support a new drug product from clinical development to marketing, the Company also requires strategic partner support to develop and commercialize its drug candidates. There can be no assurance that such strategic partner support will be obtained upon acceptable terms or at all.

The Company relies heavily on contract manufacturers for the production of product required for its clinical trials, product formulation work, scaling-up experiments and commercial production. The Company may not be able to obtain new, or keep its current, contract manufacturers to provide these services. Even if the Company does, contract manufacturers may not be reliable in meeting its requirements for cost, quality, quantity or schedule, or the requirements of any regulatory agencies. The Company may not be able to manufacture products in quantities or qualities that would enable the Company to meet its business objectives, and failure to do so would materially adversely affect the Company's business.

If the Company can successfully develop markets for its products, the Company would have to arrange for their scaled-up manufacture. There can be no assurance that the Company will, on a timely basis, be able to make the transition from manufacturing clinical trial quantities to commercial production quantities successfully or be able to arrange for scaled-up commercial contract manufacturing. Any potential difficulties experienced by the Company in manufacturing scale-up, including recalls or safety alerts, could have a material adverse effect on the Company's business, financial condition, and results of operations.

***The marketability of the Company's products may be affected by delays and the inability to obtain necessary approvals, and following any market approval, the Company's products will be subject to ongoing regulatory review and requirements which may continue to affect their marketability, including but not limited to regulatory review of drug pricing, healthcare reforms or the payment and reimbursement policies for drugs by the various insurers and other payors in the industry***

The research, development, manufacture and marketing of pharmaceutical products are subject to regulation by the FDA, and comparable regulatory authorities in other countries. These agencies and others regulate the testing, manufacture, safety and promotion of the Company's products. The Company must receive applicable regulatory approval of a product candidate before it can be commercialized in any particular jurisdiction. Approval by a regulatory authority of one country does not ensure the approval by regulatory authorities of other countries. Changes in regulatory approval policies or regulations during the development period may cause delays in the approval or rejection of an

application. Regulatory authorities have substantial discretion in the approval process and may refuse to accept any application, or may decide that our data are insufficient for approval, or require additional preclinical, clinical or other trials and place the Company's IND submissions on hold for an indeterminate amount of time. The development and regulatory approval process in each jurisdiction takes many years, requires the expenditure of substantial resources, is uncertain and subject to delays, and can adversely affect the successful development and commercialization of our drug candidates.

Even if the Company obtains marketing approval in a particular jurisdiction, there may be limits on the approval and the Company's products likely will be subject to ongoing regulatory review and regulatory requirements in that jurisdiction. Pharmaceutical companies are subject to various government regulations, including without limitation, requirements regarding occupational safety, laboratory practices, environmental protection and hazardous substance control, and may be subject to other present and future regulations.

The availability of reimbursement by governmental and other third-party payors, such as private insurance plans, will affect the market for any pharmaceutical product, and such payors tend to continually attempt to contain or reduce the costs of healthcare. Significant uncertainty exists with respect to the reimbursement status of newly approved healthcare products.

***The Company operates in an industry that is more susceptible than others to legal proceedings and, in particular, liability claims***

The Company operates in an industry that is more susceptible to legal proceedings than firms in other industries, due to the uncertainty involved in the development of pharmaceuticals. Defense and prosecution of legal claims can be expensive and time consuming, and may adversely affect the Company regardless of the outcome due to the diversion of financial, management and other resources away from the Company's primary operations. Negative judgments against the Company, even if the Company is planning to appeal such a decision, or even a settlement in a case, could negatively affect the cash reserves of the Company, and could have a material negative effect on the development of its drug products.

The Company may be exposed, in particular, to liability claims which are uninsured or not sufficiently insured, and any claims may adversely affect the Company's ability to obtain insurance in the future or result in negative publicity regarding the efficacy of its drug products. Such liability insurance is expensive, its ability is limited and it may not be available on terms that are acceptable to the Company, if at all.

The use of any of the Company's unapproved products under development, the use of its products in clinical trials, and, if regulatory approval is received, the sale of such products, may expose the Company to liability claims which could materially adversely affect the Company's business. The Company may not be able to maintain or obtain commercially reasonable liability insurance for future products, and any claims under any insurance policies may adversely affect its ability to maintain existing policies or to obtain new insurance on existing or future products. Even with adequate insurance coverage, publicity associated with any such claim could adversely affect public opinion regarding the safety or efficacy of the Company's products. As a result, any product liability claim or recall, including in connection with products previously sold by the Company through its former distribution business, could materially adversely affect the Company's business.

***If the Company were unable to maintain product liability insurance required by our third parties, the corresponding agreements would be subject to termination, which could have a material adverse impact on our operations.***

Some of our licensing and other agreements with third parties require or might require us to maintain product liability insurance. If the Company cannot maintain acceptable amounts of coverage on commercially reasonable terms in accordance with the terms set forth in these agreements, the corresponding agreements would be subject to termination, which could have a material adverse impact on the Company's operations.

***The Company is dependent upon key personnel; Director residency requirements***

The Company's ability to continue its development of potential products depends on its ability to attract and maintain qualified key individuals to serve in management and on the Board. However, the Company does not currently have a formal succession plan for members of its senior management team or for its Board and, because competition for qualified key individuals with experience relevant to the industry in which the Company operates is intense, the Company may not be able to attract and/or retain such personnel. Additionally, applicable corporate law requires that at least 25% of the Company's directors be resident Canadians, and the Company's articles provide that the Company cannot have fewer than five directors at any time.

Consequently, if the Company is unable to attract and/or loses and is unable to replace key personnel, its business could be negatively affected and, in particular, if the Company loses one or more of its three current resident Canadian directors in the future and is unable to find a sufficient number of resident Canadian directors to fill the resulting vacancy(ies), the

Board will be prevented from taking any action other than appointing additional resident Canadian directors until such time as a sufficient number of new resident Canadian directors have been appointed such that at least 25% of the Company's directors are resident Canadians.

In addition, the Company does not carry key-man insurance on any individuals.

***The Company's employees and consultants may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements, which could have a material adverse effect on the Company's business.***

The Company is exposed to the risk of employee and consultant fraud or other misconduct. Misconduct by employees and consultants could include, but are not limited to the following: failure to comply with regulators, failure to provide accurate information, failure to comply with manufacturing standards the Company has established, jurisdictional healthcare fraud and abuse of laws and regulations, failure to report financial information or data accurately or disclose unauthorized activities. For example, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, kickbacks, self-dealing, and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Employee and consultant misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to the Company's reputation. If any such actions are instituted against the Company, and the Company is not successful in defending itself or asserting its rights, those actions could have a substantial impact on the Company's business and operating results, including the imposition of substantial fines, halt in trading of the Company's common shares, possible delisting and/or other sanctions.

***Indemnification obligations to directors and officers of the Company may adversely affect the Company's finances***

The Company has entered into agreements pursuant to which the Company has agreed to indemnify its directors and senior management in respect of certain claims made against them while acting in their capacity as such. If the Company is called upon to perform its indemnity obligations, its finances may be adversely affected.

***The Company's finances may fluctuate based on foreign currency exchange rates***

The Company operates internationally and is exposed to foreign exchange risks from various currencies, primarily the U.S. dollar, the Euro and the Polish Zloty.

***Unanticipated changes in the Company's tax rates could affect its future results***

Since the Company operates in different countries and is subject to taxation in different jurisdictions, its future effective tax rates could be impacted by changes in such countries' tax laws or their interpretations. Both domestic and international tax laws are subject to change as a result of changes in fiscal policy, changes in legislation, evolution of regulation and court rulings. The application of these tax laws and related regulations is subject to legal and factual interpretation, judgment and uncertainty.

***Shareholders of the Company may face dilution through exercise of stock options, warrants and future equity financings***

To attract and retain key personnel, the Company has granted options to its key employees, directors and consultants to purchase common shares and share awards as non-cash incentives. In addition, the Company has a significant number of warrants to purchase common shares outstanding. The issuance of shares pursuant to share awards and the exercise of a significant number of such options and warrants may result in significant dilution of other shareholders of the Company.

As noted above, the Company needs additional funding and has historically turned to the equity markets to raise this funding. The future sale of equity and warrants may also result in significant dilution to the shareholders of the Company.

***The Company's share price and trading volumes are volatile and the Company may have difficulty maintaining listing requirements***

The price of the Company's common shares, as well as market prices for securities of biopharmaceutical and drug delivery companies generally, have historically been highly volatile, and have from time to time experienced significant price and volume fluctuations that are unrelated to the operating performance of particular companies.

The trading price of the Company's common shares is subject to change and could in the future fluctuate significantly. The fluctuations could be in response to numerous factors beyond the Company's control, including: quarterly variations in results of operations; announcements of technological innovations or new products by the Company, its customers or competitors; changes in securities analysts' recommendations; announcements of acquisitions; changes in earnings

estimates made by independent analysts; general fluctuations in the stock market; or revenue and results of operations below the expectations of public market securities analysts or investors. Any of these could result in a sharp decline in the market price of the common shares.

The Internet offers various avenues for the dissemination of information. The Company has no control over the information that is distributed and discussed on electronic bulletin boards and investment chat rooms. The intention of the people or organizations that distribute such information may not be in the Company's best interest and the best interests of its shareholders. This, in addition to other forms of investment information including newsletters and research publications, could result in a sharp decline in the market price of the common shares.

In addition, stock markets have occasionally experienced extreme price and volume fluctuations. The market prices for high-technology companies have been particularly affected by these market fluctuations and such effects have often been unrelated to the operating performance of such companies. These broad market fluctuations may cause a decline in the market price of the common shares.

Sales of substantial numbers of the Company's common shares could cause a decline in the market price of such common shares. There are minimum listing requirements for an issuer to maintain its listing on the Toronto Stock Exchange ("TSX"), and if the Company fails to maintain these listing requirements, it may be involuntarily delisted from the TSX. De-listing the Company or the Company shares from any securities exchange could have a negative effect on the liquidity of the Company shares and/or the ability of a shareholder to trade in shares of the Company, and could have an adverse effect on the Company's ability to raise future equity financings. The Company's common shares trade in a very low volume compared to the number of common shares outstanding. This means a shareholder could have difficulty disposing of common shares, especially if there are other shareholders of the Company trying to sell their shares in the Company at the same time. Volatility in share price and trading volumes could have an adverse effect on the Company's ability to raise future equity financings.

***The requirements of being a public company may strain the Company's resources, divert management's attention and affect its ability to attract and retain qualified board members***

As a public company, the Company is subject to the reporting requirements of Canadian securities regulators, the listing requirements of the Exchange and other applicable securities rules and regulations. Compliance with these rules and regulations may increase the Company's legal and financial compliance costs, may make some activities more difficult, time-consuming or costly and may increase the demand on the Company's systems and resources. Being a public company requires that the Company file continuous disclosure documents, including, among other things, annual and quarterly financial statements. Management's attention may be diverted from other business concerns, which could have a material adverse effect on the Company's business, financial condition and results of operations. The Company may need to hire more employees in the future, which will increase its costs and expenses.

In addition, changing laws, regulations and standards relating to corporate governance and public disclosure create uncertainty for public companies, increasing legal and financial compliance costs and making some activities more time consuming. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. The Company may invest resources to comply with evolving laws, regulations and standards, and 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 the Company's efforts to comply with new laws, regulations and standards differ from the activities intended by regulatory authorities, legal proceedings may be initiated against the Company and its business may be harmed.

***Trading in the Company's common shares outside of Canada may be subject to restrictions on trading under foreign securities laws, and purchasers of securities under private placements by the Company will be subject to certain restrictions on trading***

The Company's common shares trade on the TSX and are freely tradeable only in Canada. As such, shareholders trading the Company's common shares outside of Canada may be subject to restrictions imposed by foreign securities laws that may restrict their ability to transfer shares freely or at all. Certain securities offered by the Company pursuant to its private placements, including the unlisted warrants issued by the Company, are subject to certain initial hold periods and other restrictions on trading imposed by applicable securities laws and, in the case of the warrants, pursuant to the terms of the applicable warrant certificates. These restrictions may affect the liquidity of the investment of certain shareholders in the securities of the Company.

***General economic conditions may have an adverse effect on the Company and its business***

Continuing global economic volatility and uncertainty may have an adverse effect on the Company and its business, including without limitation the ability to raise additional financing, to obtain strategic partner support or commercialization opportunities and alliances for the Company's new drug candidates, and to obtain continued services and supplies.

***The Company's business involves environmental risks that could result in accidental contamination, injury, and significant capital expenditures in order to comply with environmental laws and regulations***

The Company and its commercial collaborators are subject to laws and regulations governing the use, manufacture, storage, handling and disposal of materials and certain waste products. Although the Company believes that its safety procedures comply with the regulations, the risk of accidental contamination or injury from these materials cannot be eliminated. In the event of such an accident, the Company could be held liable for any damages that result and any such liability could exceed the resources of the Company. The Company is not specifically insured with respect to this liability. The Company (or its collaborators) may be required to incur significant costs to comply with environmental laws and regulations in the future; and the operations, business or assets of the Company may be materially adversely affected by current or future environmental laws or regulations.

***Any failure to maintain an effective system of internal controls may result in material misstatements of our consolidated financial statements or cause us to fail to meet our reporting obligations or fail to prevent fraud; and in that case, our shareholders could lose confidence in our financial reporting, which would harm our business, could negatively impact the price of our common shares and prevent the Company from raising additional capital.***

Effective internal controls are necessary for the Company to provide reliable financial reports and prevent fraud. If the Company fails to maintain an effective system of internal controls, the Company may not be able to report its financial results accurately or prevent fraud; and in that case, the Company's shareholders could lose confidence in our financial reporting, which would harm our business, negatively impact the price of the Company's common shares and also prevent the Company from raising additional capital. Even if we were to conclude that our internal control over financial reporting provides reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with IFRS as issued by the IASB, because of its inherent limitations, internal control over financial reporting may not prevent or detect fraud or misstatements. Failure to achieve and maintain effective internal control over financial reporting could prevent the Company from complying with its reporting obligations on a timely basis, which could result in the loss of investor confidence in the reliability of the Company's consolidated financial statements, harm our business, negatively impact the trading price of our common shares and prevent the Company from raising additional capital.

## **RISK FACTORS IN OTHER PUBLIC FILINGS**

For all of the reasons set forth above, together with those additional risk factors identified under the headings "Forward-Looking Statements" and "Risk Factors" in the Company's most recent Annual Information Form filed under the Company's profile on SEDAR at [www.sedar.com](http://www.sedar.com), investors should not place undue reliance on forward-looking information. Other than any obligation to disclose material information under applicable securities laws, the Company undertakes no obligation to revise or update any forward-looking information after the date hereof.

Data relevant to estimated market sizes and penetration for the Company's lead products under development are presented in this MD&A. This data has been obtained from a variety of published resources including published scientific literature, websites and information generally available through publicized means. The Company attempts to source reference data from multiple sources whenever possible for confirmatory purposes. Although the Company believes the foregoing data is reliable, the Company has not independently verified the accuracy and completeness of this data.

## **ADDITIONAL INFORMATION**

Additional information relating to the Company's fiscal year ended July 31, 2019, is available under the Company's profile on SEDAR at [www.sedar.com](http://www.sedar.com).

October 23, 2018

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**Consolidated Financial Statements of Helix BioPharma Corp.  
Years ended July 31, 2019 and 2018**

# MANAGEMENT'S RESPONSIBILITY FOR FINANCIAL INFORMATION

The accompanying consolidated financial statements of Helix BioPharma Corp. and other financial information contained in this annual report are the responsibility of management. The consolidated financial statements have been prepared in conformity with International Financial Reporting Standards, using management's best estimates and judgments, where appropriate. In the opinion of management, these consolidated financial statements reflect fairly the financial position and the results of operations and cash flows of the Company within reasonable limits of materiality. The financial information contained elsewhere in this annual report has been reviewed to ensure consistency with that in the consolidated financial statements.

To assist management in discharging these responsibilities, the Company maintains an effective system of procedures and internal controls which is designed to provide reasonable assurance that its assets are safeguarded against loss from unauthorized use or disposition, that transactions are executed in accordance with management's authorization and that the financial records form a reliable base for the preparation of accurate and reliable financial information.

The Board of Directors ensures that management fulfills its responsibilities for the financial reporting and internal control. The Board of Directors exercises this responsibility through its independent Audit Committee comprising a majority of unrelated and outside directors. The Audit Committee meets periodically with management and annually with the external auditors to review audit recommendations and any matters that the auditors believe should be brought to the attention of the Board of Directors. The Audit Committee also reviews the consolidated financial statements and recommends to the Board of Directors that the statements be approved for issuance to the shareholders.

The consolidated financial statements have been audited by BDO Canada LLP, Chartered Professional Accountants, Licensed Public Accountants, which has full and unrestricted access to the Audit Committee. BDO Canada LLP's report on the consolidated financial statements is presented herein.

/s/ Heman Chao  
Heman Chao  
Chief Executive Officer

/s/ Frank Michalargias  
Frank Michalargias  
Chief Financial Officer

October 23, 2019



BDO Canada LLP  
60 Columbia Way, Suite 300  
Markham, Ontario, L3R 0C9  
Canada

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## Independent Auditor's Report

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To the Shareholders of Helix BioPharma Corp.

### Opinion

We have audited the consolidated financial statements of Helix BioPharma Corp. and its subsidiaries (the "Group"), which comprise the consolidated statements of financial position as at July 31, 2019 and 2018, and the consolidated statements of net loss and comprehensive loss, changes in shareholders' equity and cash flows for the years then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as at July 31, 2019 and 2018 and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with International Financial Reporting Standards ("IFRS").

### Basis for Opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Consolidated Financial Statements* section of our report. We are independent of the Group in accordance with the ethical requirements that are relevant to our audit of the consolidated financial statements in Canada, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

### Material Uncertainty Related to Going Concern

We draw attention to Note 1 in the consolidated financial statements, which indicates that the Group incurred a net loss of \$7,526,000 during the year ended July 31, 2019 and, as of that date, the Group's cash of \$206,000 is insufficient to meet anticipated cash needs for working capital and capital expenditures through the next twelve months. As stated in Note 1, these events or conditions, along with other matters as set forth in Note 1, indicate that a material uncertainty exists that may cast significant doubt on the Group's ability to continue as a going concern. Our opinion is not modified in respect of this matter.

### Other Information

Management is responsible for the other information. The other information comprises:

- The information, other than the consolidated financial statements and our auditor's report thereon, included in the 2019 Annual Report, and
- The information included in the Management's Discussion and Analysis of Financial Condition and Results of Operations for the years ended July 31, 2019 and 2018.

Our opinion on the consolidated financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

We obtained Management's Discussion and Analysis of Financial Condition and Results of Operations for the years ended July 31, 2019 and 2018 and the 2019 Annual Report prior to the date of this auditor's report. If, based on the work we have performed on this other information, we conclude that there is a material misstatement of this other information, we are required to report that fact in this auditor's report. We have nothing to report in this regard.

## **Responsibilities of Management and Those Charged with Governance for the Consolidated Financial Statements**

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with IFRS, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's financial reporting process.

## **Auditor's Responsibilities for the Audit of the Consolidated Financial Statements**

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

The engagement partner on the audit resulting in this independent auditor's report is Brion Hendry.

/s/ BDO Canada LLP  
Chartered Professional Accountants, Licensed Public Accountants  
Markham, Ontario  
October 24, 2019

## HELIX BIOPHARMA CORP.

### Consolidated Statement of Financial Position

In thousands of Canadian dollars

As at July 31, 2019 and 2018

As at:	July 31, 2019	July 31, 2018
<b>ASSETS</b>		
<b>Non-current assets</b>		
Property, plant and equipment ( <i>note 4</i> )	\$ 253	\$ 374
	253	374
<b>Current assets</b>		
Prepaid expenses	191	92
Accounts receivable	290	315
Cash	206	366
	687	773
<b>Total assets</b>	<b>\$ 940</b>	<b>\$ 1,147</b>
<b>SHAREHOLDERS' DEFICIENCY AND LIABILITIES</b>		
<b>Shareholders' deficiency (<i>note 5</i>)</b>	<b>\$ (3,281)</b>	<b>\$ (1,527)</b>
<b>Current liabilities</b>		
Deferred government grant ( <i>note 11</i> )	124	38
Accrued liabilities	1,057	644
Accounts payable	3,040	1,992
	4,221	2,674
<b>Total liabilities and shareholders' deficiency</b>	<b>\$ 940</b>	<b>\$ 1,147</b>

The accompanying notes are an integral part of these consolidated financial statements.

On behalf of the Board of Directors:

/s/ Slawomir Majewski  
Slawomir Majewski,  
Chair, Board of Directors

/s/ Artur Gabor  
Artur Gabor  
Chair, Audit Committee

## HELIX BIOPHARMA CORP.

### Consolidated Statement of Net Loss and Comprehensive Loss

Years ended July 31, 2019 and 2018 (In thousands of Canadian dollars, except per share amounts)

	2019	2018
<b>Expenses</b>		
Research and development ( <i>note 10</i> )	5,006	6,084
Operating, general and administration ( <i>note 12</i> )	2,486	2,462
<b>Results from operating activities before finance items</b>	(7,492)	(8,546)
<b>Finance items</b>		
Finance income	3	9
Finance expense	(1)	(29)
Foreign exchange loss	(36)	(59)
	(34)	(79)
<b>Net loss and total comprehensive loss</b>	\$ (7,526)	\$ (8,625)
<b>Loss per common share</b>		
Basic	\$ (0.07)	\$ (0.09)
Diluted	\$ (0.07)	\$ (0.09)
Weighted average number of common shares used in the calculation of basic and diluted loss per share	106,645,801	99,928,708

The accompanying notes are an integral part of these consolidated financial statements.

**HELIX BIOPHARMA CORP.****Consolidated Statement of Changes in Shareholders' Equity**

Years ended July 31, 2019 and 2018 (In thousands of Canadian dollars, except common share and warrant numbers)

	Common shares		Share purchase warrants		Options	Contributed surplus	Deficit	Shareholder deficiency
	Amount	Number	Amount	Number				
Balances, July 31, 2017	\$ 120,681	95,711,579	\$ 11,141	27,980,975	\$ 673	\$ 22,868	\$ (155,380)	\$ (17)
Net loss for the year	–	–	–	–	–	–	(8,625)	(8,625)
Common stock, issued	4,884	7,098,000	–	–	–	–	–	4,884
Warrants, issued	–	–	2,221	7,098,000	–	–	–	2,221
Warrants, expired unexercised	–	–	–	–	–	–	–	–
Warrants, exercised	–	–	–	–	–	–	–	–
Stock-based compensation	–	–	–	–	10	–	–	10
Options, exercised	–	–	–	–	–	–	–	–
Options, expired unexercised	–	–	–	–	–	–	–	–
Balances, July 31, 2018	\$ 125,565	102,809,579	\$ 13,362	35,078,975	\$ 683	\$ 22,868	\$ (164,005)	\$ (1,527)
Net loss for the year	–	–	–	–	–	–	(7,526)	(7,526)
Common stock, issued	3,967	8,415,922	–	–	–	–	–	3,967
Warrants, issued	–	–	1,444	8,415,922	–	–	–	1,444
Warrants, expired unexercised	–	–	(43)	(122,000)	–	43	–	–
Warrants, exercised	–	–	–	–	–	–	–	–
Stock-based compensation	–	–	–	–	361	–	–	361
Options, exercised	–	–	–	–	–	–	–	–
Options, expired unexercised	–	–	–	–	(404)	404	–	–
Balances, July 31, 2019	\$ 129,532	111,225,501	\$ 14,763	43,372,897	\$ 640	\$ 23,315	\$ (171,531)	\$ (3,281)

The accompanying notes are an integral part of these consolidated financial statements.

**HELIX BIOPHARMA CORP.****Consolidated Statement of Cash Flows**

Years ended July 31, 2019 and 2018 (In thousands of Canadian dollars)

	2019	2018
<b>Cash flows from operating activities</b>		
Net loss and total comprehensive loss	\$ (7,526)	\$ (8,625)
Items not involving cash:		
Depreciation of property, plant and equipment	125	165
Stock-based compensation	361	10
Foreign exchange loss	36	60
Change in non-cash working capital:		
Accounts receivable	25	315
Prepaid expenses	(99)	81
Accounts payable	1,048	554
Accrued liabilities	413	(78)
Deferred liabilities	86	(6)
<b>Net cash used in operating activities</b>	<b>(5,531)</b>	<b>(7,524)</b>
<b>Cash flows from financing activities</b>		
Proceeds from the issuance of common shares and share purchase warrants, net of issue costs	5,411	7,105
<b>Net cash provided by financing activities</b>	<b>5,411</b>	<b>7,105</b>
<b>Cash flows from investing activities</b>		
Purchase of property, plant and equipment	(4)	(53)
<b>Net cash used in investing activities</b>	<b>(4)</b>	<b>(53)</b>
<b>Foreign exchange loss on cash</b>	<b>(36)</b>	<b>(59)</b>
<b>Net decrease in cash</b>	<b>\$ (160)</b>	<b>\$ (531)</b>
<b>Cash, beginning of year</b>	<b>366</b>	<b>897</b>
<b>Cash, end of year</b>	<b>\$ 206</b>	<b>\$ 366</b>

The accompanying notes are an integral part of these consolidated financial statements.

## HELIX BIOPHARMA CORP.

### Notes to Consolidated Financial Statements

Years ended July 31, 2019 and 2018

(Tabular dollar amounts in thousands of Canadian dollars)

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Helix BioPharma Corp. (the "Company"), incorporated under the *Canada Business Corporations Act*, is an immune-oncology company primarily focused in the areas of cancer prevention and treatment. The Company has funded its research and development activities, mainly through the issuance of common shares and warrants. The Company expects to incur additional losses and therefore will require additional financial resources, on an ongoing basis. It is not possible to predict the outcome of future research and development activities or the financing thereof.

#### 1. Basis of presentation and going concern

These consolidated financial statements have been prepared on a going-concern basis, which assumes that the Company will continue in operation for the foreseeable future and, accordingly, will be able to realize its assets and discharge its liabilities in the normal course of operations. The Company's ability to continue as a going concern is dependent mainly on obtaining additional financing. The Company does not have sufficient cash to meet anticipated cash needs for working capital and capital expenditures through the next twelve months.

The Company reported a consolidated net loss and total comprehensive loss of \$7,526,000 for the fiscal year ended July 31, 2019 (July 31, 2018 - \$8,625,000). As at July 31, 2019 the Company had a working capital deficiency of \$3,534,000, shareholders' deficiency of \$3,281,000 and a deficit of \$171,531,000. As at July 31, 2018 the Company had a working capital deficiency of \$1,901,000, shareholders' deficiency of \$1,527,000 and a deficit of \$164,005,000. The Company will require additional financing in the immediate near term and in the future to see the current research and development initiatives through to completion. There can be no assurance however, that additional financing can be obtained in a timely manner, or at all.

Not raising sufficient additional financing on a timely basis may result in delays and possible termination of all or some of the Company's research and development initiatives, and as a result, may cast significant doubt as to the ability of the Company to operate as a going concern and accordingly, the appropriateness of the use of the accounting principles applicable to a going concern. These consolidated financial statements do not include any adjustments to the carrying amount and classification of reported assets, liabilities and expenses that might be necessary should the Company not be successful in its aforementioned initiatives. Any such adjustments could be material. The Company cannot predict whether it will be able to raise the necessary funds it needs to continue as a going concern.

#### *Statement of compliance*

The Company's consolidated financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB") and interpretations of the International Financial Reporting Interpretation Committee.

The consolidated financial statements of the Company were approved and authorized for issue by the Board of Directors on October 23, 2019.

#### *Use of estimates and critical judgment*

The preparation of the Company's financial statements requires management to make critical judgments, estimates and assumptions that affect the reported amounts of expenses, assets and liabilities, and the disclosure of contingent liabilities, at the reporting date. On an ongoing basis, management evaluates its judgments, estimates and assumptions using historical experience and various other factors it believes to be reasonable under the given circumstances. Actual outcomes may differ from these estimates that could require a material adjustment to the reported carrying amounts in the future.

The most significant critical estimates and judgments made by management include the following:

a) Going Concern

Significant judgments related to the Company's ability to continue as a going concern are disclosed in the first paragraph above in Note 1.

b) Clinical study expenses

Clinical study expenses are accrued based on services received and efforts expended pursuant to contracts with contract research organizations ("CROs"), consultants, clinical study sites and other vendors. In the normal course of business, the Company contracts with third parties to perform various clinical study activities. The financial terms of these agreements vary from contract to contract and are subject to negotiations that may result in uneven payment outflows. Payments under the contracts depend on various factors such as the achievement of certain events, the successful enrolment of patients or the completion of portions of the clinical study and/or other similar conditions. The Company determines the accruals by reviewing contracts, vendor agreements and purchase orders, and through discussions with internal personnel and external providers as to the progress or stage of completion of the clinical studies or services and the agreed-upon fee to be paid for such services. However, actual costs and timing of the Company's clinical studies is uncertain, subject to risk and may change depending upon a number of factors, including the Company's clinical development plans and trial protocols.

**HELIX BIOPHARMA CORP.****Notes to Consolidated Financial Statements**

Years ended July 31, 2019 and 2018

(Tabular dollar amounts in thousands of Canadian dollars)

## c) Valuation of share-based compensation and warrants

Management measures the costs for share-based compensation and warrants using market-based option valuation techniques. Assumptions are made and estimates are used in applying the valuation techniques. These include estimating the future volatility of the share price, expected dividend yield, future employee turnover rates, and future exercise behaviours. Such estimates and assumptions are inherently uncertain. Changes in these assumptions affect the fair value estimates of share-based payments and warrants.

## d) Income taxes

Deferred tax assets, including those arising from unutilized tax losses, require management to assess the likelihood that the Company will generate future taxable income in future years in order to utilize any deferred tax asset which has been recognized. Estimates of future taxable income are based on forecasted cash flows. At the current statement of financial position date, no deferred tax assets have been recognized in these financial statements.

## e) Impairment of long-lived assets

Long-lived assets are reviewed for impairment upon the occurrence of events or changes in circumstances indicating that the carrying value of the asset may not be recoverable. For the purpose of measuring recoverable amounts, assets are grouped at the lowest levels for which there are separately identifiable cash flows (cash-generating units). The recoverable amount is the higher of an asset's fair value less costs to sell and value in use (being the present value of the expected future cash flows of the relevant asset or cash-generating unit). An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. Management evaluates impairment losses for potential reversals when events or circumstances warrant such consideration.

*Functional and presentation currency*

The functional and presentation currency of the Company is the Canadian dollar.

**2. Significant accounting policies**

The accounting policies set out below have been applied consistently to all periods presented in these consolidated financial statements.

*Basis of consolidation*

These consolidated financial statements include the accounts of the Company and its subsidiaries listed below. Control is achieved when the Company has the power to govern the financial and operating policies of an entity so as to obtain benefits from its activities. Subsidiaries are fully consolidated from the date on which control is acquired by the Company. Inter-company transactions and balances are eliminated upon consolidation. They are de-consolidated from the date that control by the Company ceases. The consolidated financial statements include the assets and liabilities and results of operations of all subsidiaries after elimination of intercompany transactions and balances.

As at July 31, 2019, the wholly owned subsidiaries of the Company include: Helix BioPharma Inc., incorporated in the USA, Helix Immuno-Oncology S.A., incorporated in Poland and Helix Product Development (Ireland) Limited, incorporated in Ireland.

*Cash*

The Company considers cash on hand, deposits in banks and bank term deposits with maturities of 90 days or less as cash.

*Property, plant and equipment*

Property, plant and equipment are recorded at cost less accumulated depreciation. Impairment charges are included in accumulated depreciation.

Depreciation is provided using the following methods and estimated useful life:

Asset	Basis	Rate
Computer equipment and software	Straight line	3 years
Furniture and fixtures	Straight line	5 years
Research and manufacturing equipment	Straight line	4-10 years
Leasehold improvements	Straight line	Lease term

**HELIX BIOPHARMA CORP.****Notes to Consolidated Financial Statements**

Years ended July 31, 2019 and 2018

(Tabular dollar amounts in thousands of Canadian dollars)

*Research and development costs*

Research costs are expensed as incurred. Development costs are expensed as incurred except for those which meet the criteria for deferral, in which case, the costs are capitalized and amortized to operations over the estimated period of benefit. No costs have been deferred to date.

*Investment tax credits*

The Company is entitled to Canadian federal and provincial investment tax credits, which are earned as a percentage of eligible research and development expenditures incurred in each taxation year. Investment tax credits are accounted for as a reduction of the related expenditure for items of a current nature and a reduction of the related asset cost for items of a capital nature, provided that the Company has reasonable assurance that the tax credits will be realized.

*Stock-based compensation*

The Company accounts for stock-based compensation and other stock-based payments awarded to employees in accordance with the fair value method. The fair value of stock options granted is determined at the appropriate measurement date using the Black-Scholes option pricing model, and generally expensed over the options' vesting period for employee awards. Awards with graded vesting are considered multiple awards for fair value measurement and stock-based compensation calculation. In determining the expense, the Company accounts for forfeitures using an estimate based on historical trends. When stock-based compensation and other stock-based payments are awarded to persons other than non-employees, share capital is increased for the fair value of goods and services received.

*Foreign currency translation*

The Company's currency of presentation is the Canadian dollar, which is also the Company's functional currency. Foreign currency-denominated items are translated into Canadian dollars. Monetary assets and liabilities in foreign currencies are translated into Canadian dollars at the rates of exchange in effect at the balance sheet dates. Non-monetary items are translated at historical exchange rates. Revenue and expenses are translated at the exchange rates prevailing at their respective transaction dates. Exchange gains and losses arising on translation are included in income.

*Income taxes*

The Company follows the asset and liability method of accounting for income taxes. Under this method, deferred income tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of certain existing assets and liabilities and their respective tax bases. Deferred income tax assets and liabilities are measured using enacted or substantively 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 date of substantive enactment. Given the Company's history of net losses and expected future losses, the Company is of the opinion that it is probable that these tax assets will not be realized in the foreseeable future and therefore, the deferred tax asset has not been recognized.

*Financial instruments*

The Company's financial assets and liabilities are initially recorded at fair value and subsequently measured based on their assigned classifications as follows. The classification depends on the nature and purpose of the financial asset or liability and is determined at the time of initial recognition.

Asset / Liability	Classification
Cash	Amortized Cost
Account Receivable	Amortized Cost
Accounts Payable	Amortized Cost
Accrued Liabilities	Amortized Cost

*De-recognition of financial assets and liabilities*

De-recognition is applied for all or part of a financial asset when the contractual rights to the cash flows and benefits from the financial asset expire, the Company loses controls of the assets, or the Company substantially transfers the significant risks and rewards of ownership of the asset.

De-recognition is applied for all or part of a financial liability when the liability is extinguished due to cancellation or discharge or expiry of the obligation.

## HELIX BIOPHARMA CORP.

### Notes to Consolidated Financial Statements

Years ended July 31, 2019 and 2018

(Tabular dollar amounts in thousands of Canadian dollars)

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#### *Impairment*

##### (i) Financial assets:

On an individual basis, material financial assets are assessed for indicators of impairment at the end of each reporting period. Other individually non-material financial assets are tested as a group of financial assets based on similar risk characteristic. Financial assets are considered to be impaired when based upon an expected loss model as prescribed by IFRS 9, taking into consideration both historic and forward-looking information.

For financial assets carried at amortized cost, the amount of the impairment is the difference between the asset's carrying amount and the present value of estimated future cash flows, discounted at the financial asset's effective interest rate. Impairment losses are recognized in income and reflected in an allowance account against the respective financial asset.

##### (ii) Non-financial assets:

The carrying amounts of the Company's non-financial assets are reviewed at each reporting date to determine whether there is any indication of impairment. If such an indication exists, the recoverable amount is estimated.

The recoverable amount of an asset or a cash-generating unit is the greater of its value in use and its fair value less costs to sell. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset or cash-generating unit. For the purpose of impairment testing, assets that cannot be tested individually are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of cash inflows of other assets or cash-generating units. An impairment loss is recognized if the carrying amount of an asset or its related cash-generating unit exceeds its estimated recoverable amount.

Impairment losses recognized in prior periods are assessed each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation, if no impairment loss had been recognized.

#### *Basic and diluted loss per common share*

Basic loss per share is computed by dividing the net loss available to common shareholders by the weighted average number of shares outstanding during the reporting period. Diluted loss per share is computed similarly to basic loss per share, except that the weighted average shares outstanding are increased to include additional shares for the assumed exercise of stock options and warrants, if dilutive. The number of additional shares is calculated by assuming that outstanding stock options and warrants were exercised and that the proceeds from such exercises were used to acquire common shares at the average market price during the reporting periods. The inclusion of the Company's stock options and warrants in the computation of diluted loss per share has an anti-dilutive effect on the loss per share and, therefore, they have been excluded from the calculation of diluted loss per share.

#### *Government Grants and Disclosure of Government Assistance*

Government grant funds are recognised in income when there is reasonable assurance that the Company has complied with the conditions attached to them and that the grant funds will be received. Grant funds receivable are recognized in income over the periods in which the entity recognizes as expenses, the related costs for which the grant is intended to compensate.

### **3. New accounting standards and pronouncements not yet adopted**

#### ***New accounting standards***

##### *IFRS 9 Financial Instruments*

Effective August 1, 2018, the Company adopted IFRS 9 Financial Instruments (IFRS 9) which replaced IAS 39, Financial Instruments: Recognition and Measurement (IAS 39). IFRS 9 includes revised guidance on the classification and measurement of financial assets and liabilities; new guidance for measuring impairment on financial assets; and new hedge accounting guidance.

On adoption of IFRS 9, the Company has classified the financial assets and financial liabilities held at August 1, 2018, based on the new classification requirements and the characteristics of each financial instrument as at the transition date. The new classification did not require a restatement of prior periods.

##### *IFRS 15 Revenue from Contracts with Customers*

The Company currently has no revenue stream as it is still in the research and development stage. As it evolves out of that stage, the Company will have a closer look at how this standard will impact how it recognizes revenue.

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**Future accounting standards**

New accounting standards and pronouncements issued but not yet effective up to the date of issuance of the Company's consolidated financial statements are listed below. This listing includes standards and interpretations issued, which the Company reasonably expects to be applicable at a future date. The Company intends to adopt those standards when they become effective.

Certain pronouncements have been issued by the IASB or International Financial Reporting Interpretations Committee. Many of these updates are not applicable or are inconsequential to the Company and have been excluded from the discussion below:

*IFRS 16, Leases*

In January 2016, the IASB has issued IFRS 16 *Leases* ("IFRS 16"), its new leases standard that requires lessees to recognize assets and liabilities for most leases on their balance sheets. Lessees applying IFRS 16 will have a single accounting model for all leases, with certain exemptions. Lessor accounting is substantially unchanged. The new standard will be effective from January 1, 2019 with limited early application permitted. The Company is evaluating the impact of the new standard on its results of operations, financial position and disclosures.

**4. Property, plant and equipment**

	2019			2018		
	Cost	Accumulated depreciation	Net book value	Cost	Accumulated depreciation	Net book value
Research equipment	\$ 1,689	\$ 1,448	\$ 241	\$ 1,689	\$ 1,339	\$ 350
Manufacturing equipment	402	402	–	402	402	–
Leasehold improvements	359	359	–	359	359	–
Computer equipment	109	105	4	106	93	13
Computer software	62	61	1	61	58	3
Furniture and fixtures	22	15	7	22	14	8
	\$ 2,643	\$ 2,390	\$ 253	\$ 2,639	\$ 2,265	\$ 374

**5. Shareholders' deficiency***Preferred shares*

Authorized 10,000,000 preferred shares.

As at July 31, 2019 and 2018 the Company had nil preferred shares issued and outstanding.

*Common shares and share purchase warrants*

Authorized unlimited common shares without par value.

As at July 31, 2019 the Company had 111,225,501 (2018 – 102,809,579) common shares issued and outstanding.

On August 31, 2017, the Company completed a private placement, issuing a total of 1,092,500 units at \$1.20 per unit for gross proceeds of approximately \$1,311,000. Each common share purchase warrant entitles the holder to purchase one common share at a price of \$1.50 until August 30, 2022. Of the gross proceeds amount, \$438,000 was allocated to the share purchase warrants based on fair value and the residual amount of \$873,000 was allocated to the common shares. Share issue costs totalling \$221,000 were proportionately allocated to the share purchase warrants (\$74,000) and the common shares (\$147,000), respectively.

On October 19, 2017, the Company completed a private placement, issuing a total of 3,258,000 units at \$1.20 per unit for gross proceeds of approximately \$3,910,000. Each common share purchase warrant entitles the holder to purchase one common share at a price of \$1.50 until October 18, 2022. Of the gross proceeds amount, \$1,248,000 was allocated to the share purchase warrants based on fair value and the residual amount of \$2,662,000 was allocated to the common shares. Share issue costs totalling \$555,000 were proportionately allocated to the share purchase warrants (\$177,000) and the common shares (\$378,000), respectively.

On December 22, 2017, the Company completed a private placement, issuing a total of 625,500 units at \$1.20 per unit for gross proceeds of approximately \$751,000. Each common share purchase warrant entitles the holder to purchase one common share at a price of \$1.50 until December 21, 2022. Of the gross proceeds amount, \$232,000 was allocated to the share purchase warrants based on fair value and the residual amount of \$519,000 was allocated to the common shares. Share issue costs totalling \$156,000 were proportionately allocated to the share purchase warrants (\$45,000) and the common shares (\$111,000), respectively.

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On April 30, 2018, the Company completed a private placement, issuing a total of 504,500 units at \$1.20 per unit for gross proceeds of approximately \$605,000. Each common share purchase warrant entitles the holder to purchase one common share at a price of \$1.50 until April 29, 2023. Of the gross proceeds amount, \$179,000 was allocated to the share purchase warrants based on fair value and the residual amount of \$426,000 was allocated to the common shares. Share issue costs totalling \$129,000 were proportionately allocated to the share purchase warrants (\$38,000) and the common shares (\$91,000), respectively.

On June 7, 2018, the Company completed a private placement, issuing a total of 784,000 units at \$1.20 per unit for gross proceeds of approximately \$941,000. Each common share purchase warrant entitles the holder to purchase one common share at a price of \$1.50 until June 6, 2023. Of the gross proceeds amount, \$277,000 was allocated to the share purchase warrants based on fair value and the residual amount of \$664,000 was allocated to the common shares. Share issue costs totalling \$173,000 were proportionately allocated to the share purchase warrants (\$51,000) and the common shares (\$122,000), respectively.

On July 9, 2018, the Company completed a private placement, issuing a total of 833,500 units at \$1.20 per unit for gross proceeds of approximately \$1,000,000. Each common share purchase warrant entitles the holder to purchase one common share at a price of \$1.50 until July 8, 2023. Of the gross proceeds amount, \$284,000 was allocated to the share purchase warrants based on fair value and the residual amount of \$716,000 was allocated to the common shares. Share issue costs totalling \$181,000 were proportionately allocated to the share purchase warrants (\$51,000) and the common shares (\$130,000), respectively.

On August 8, 2018, the Company completed a private placement, issuing a total of 682,000 units at \$1.20 per unit for gross proceeds of approximately \$818,000. Each common share purchase warrant entitles the holder to purchase one common share at a price of \$1.50 until August 7, 2023. Of the gross proceeds amount, \$212,000 was allocated to the share purchase warrants based on fair value and the residual amount of \$606,000 was allocated to the common shares. Share issue costs totalling \$157,000 were proportionately allocated to the share purchase warrants (\$41,000) and the common shares (\$116,000), respectively.

On September 10, 2018, the Company completed a private placement, issuing a total of 380,000 units at \$1.20 per unit for gross proceeds of approximately \$456,000. Each common share purchase warrant entitles the holder to purchase one common share at a price of \$1.50 until September 9, 2023. Of the gross proceeds amount, \$128,000 was allocated to the share purchase warrants based on fair value and the residual amount of \$328,000 was allocated to the common shares. Share issue costs totalling \$111,000 were proportionately allocated to the share purchase warrants (\$31,000) and the common shares (\$80,000), respectively.

On October 30, 2018, the Company completed a private placement, issuing a total of 285,000 units at \$1.20 per unit for gross proceeds of approximately \$342,000. Each common share purchase warrant entitles the holder to purchase one common share at a price of \$1.50 until October 29, 2023. Of the gross proceeds amount, \$61,000 was allocated to the share purchase warrants based on fair value and the residual amount of \$281,000 was allocated to the common shares. Share issue costs totalling \$95,000 were proportionately allocated to the share purchase warrants (\$17,000) and the common shares (\$78,000), respectively.

On December 6, 2018, the Company completed a private placement, issuing a total of 726,000 units at \$1.20 per unit for gross proceeds of approximately \$871,000. Each common share purchase warrant entitles the holder to purchase one common share at a price of \$1.50 until December 5, 2023. Of the gross proceeds amount, \$184,000 was allocated to the share purchase warrants based on fair value and the residual amount of \$687,000 was allocated to the common shares. Share issue costs totalling \$150,000 were proportionately allocated to the share purchase warrants (\$32,000) and the common shares (\$118,000), respectively.

On December 20, 2018, the Company completed a private placement, issuing a total of 285,000 units at \$1.20 per unit for gross proceeds of approximately \$342,000. Each common share purchase warrant entitles the holder to purchase one common share at a price of \$1.50 until December 19, 2023. Of the gross proceeds amount, \$75,000 was allocated to the share purchase warrants based on fair value and the residual amount of \$267,000 was allocated to the common shares. Share issue costs totalling \$59,000 were proportionately allocated to the share purchase warrants (\$13,000) and the common shares (\$46,000), respectively.

On December 21, 2018, the Company completed a private placement, issuing a total of 584,000 units at \$1.20 per unit for gross proceeds of approximately \$701,000. Each common share purchase warrant entitles the holder to purchase one common share at a price of \$1.50 until December 20, 2023. Of the gross proceeds amount, \$153,300 was allocated to the share purchase warrants based on fair value and the residual amount of \$547,500 was allocated to the common shares. Share issue costs totalling \$121,000 were proportionately allocated to the share purchase warrants (\$26,000) and the common shares (\$95,000), respectively.

On December 28, 2018, the Company completed a private placement, issuing a total of 290,000 units at \$1.20 per unit for gross proceeds of approximately \$348,000. Each common share purchase warrant entitles the holder to purchase one common share

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at a price of \$1.50 until December 27, 2023. Of the gross proceeds amount, \$79,000 was allocated to the share purchase warrants based on fair value and the residual amount of \$269,000 was allocated to the common shares. Share issue costs totalling \$60,000 were proportionately allocated to the share purchase warrants (\$14,000) and the common shares (\$46,000), respectively.

On March 15, 2019, the Company completed a private placement, issuing a total of 1,195,000 units at \$0.51 per unit for gross proceeds of approximately \$610,000. Each common share purchase warrant entitles the holder to purchase one common share at a price of \$0.72 until March 14, 2024. Of the gross proceeds amount, \$192,000 was allocated to the share purchase warrants based on fair value and the residual amount of \$418,000 was allocated to the common shares. Share issue costs totalling \$86,000 were proportionately allocated to the share purchase warrants (\$27,000) and the common shares (\$59,000), respectively.

On April 18, 2019, the Company completed a private placement, issuing a total of 1,992,922 units at \$0.51 per unit for gross proceeds of approximately \$1,016,000. Each common share purchase warrant entitles the holder to purchase one common share at a price of \$0.72 until April 17, 2024. Of the gross proceeds amount, \$330,000 was allocated to the share purchase warrants based on fair value and the residual amount of \$686,000 was allocated to the common shares. Share issue costs totalling \$140,000 were proportionately allocated to the share purchase warrants (\$45,000) and the common shares (\$95,000), respectively.

On April 29, 2019, the Company completed a private placement, issuing a total of 1,000,000 units at \$0.51 per unit for gross proceeds of approximately \$510,000. Each common share purchase warrant entitles the holder to purchase one common share at a price of \$0.72 until April 28, 2024. Of the gross proceeds amount, \$164,000 was allocated to the share purchase warrants based on fair value and the residual amount of \$346,000 was allocated to the common shares. Share issue costs totalling \$73,000 were proportionately allocated to the share purchase warrants (\$23,000) and the common shares (\$50,000), respectively.

On May 29, 2019, the Company completed a private placement, issuing a total of 996,000 units at \$0.51 per unit for gross proceeds of approximately \$508,000. Each common share purchase warrant entitles the holder to purchase one common share at a price of \$0.72 until May 28, 2024. Of the gross proceeds amount, \$146,000 was allocated to the share purchase warrants based on fair value and the residual amount of \$362,000 was allocated to the common shares. Share issue costs totalling \$60,000 were proportionately allocated to the share purchase warrants (\$17,000) and the common shares (\$43,000), respectively.

The following table provides information on share purchase warrants outstanding as at:

Exercise Price	July 31, 2019		July 31, 2018	
	Weighted average remaining contractual life (in years)	Number of share purchase warrants outstanding	Weighted average remaining contractual life (in years)	Number of share purchase warrants outstanding
\$ 0.72	4.72	5,183,922	–	–
\$ 1.50	3.32	15,982,300	4.08	12,750,300
\$ 1.54	2.75	8,680,000	1.71	8,680,000
\$ 1.61	1.25	4,546,000	0.25	4,668,000
\$ 1.82	1.99	1,250,000	2.99	1,250,000
\$ 1.92	2.05	644,675	3.05	644,675
\$ 1.98	1.70	3,105,000	2.70	3,105,000
\$ 2.24	1.94	3,981,000	0.94	3,981,000
Outstanding, end of period		43,372,897		35,078,975

On October 16, 2018, the Company announced to extend the exercise period of a total of 4,546,000 outstanding common share purchase warrants (the "Warrants"), all of which are held by arm's length parties. The Warrants were issued pursuant to a private placement of the Company completed on November 1, 2013. The TSX approved the extension of the expiry date of the Warrants and as a result, each Warrant entitles the holder to purchase one common share of the Company at an exercise price of \$1.61 at any time until October 31, 2020. The exercise price of \$1.61 remains unchanged.

At the Company's Annual and Special Meeting of shareholders which was held on April 15, 2019, a total of 12,661,000 warrants were approved by a majority of votes cast by disinterested shareholders to extend the exercise period for an additional two years. All other terms and conditions remained the same. The Warrants were originally issued pursuant to three private placements which were completed by the Company on July 10, 2014, April 1, 2015 and April 29, 2015. The TSX approved the extension of the expiry date of the Warrants and as a result, each Warrant entitles the holder to purchase one common share of the Company at exercise prices of \$1.54 and \$2.24 with maturity dates ranging from July 9, 2021 through April 28, 2022.

*Stock options*

The Company's equity compensation plan reserves up to 10% of the Company's outstanding common shares from time to time for granting to directors, officers and employees of the Company or any person or company engaged to provide ongoing

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management or consulting services. Based on the Company's current issued and outstanding common shares as at July 31, 2019, options to purchase up to 11,122,550 common shares (2018 – 10,280,957) may be granted under the plan. As at July 31, 2019, options to purchase a total of 4,875,000 common shares (2018 – 930,000) were issued and outstanding under the equity compensation plan.

The following table provides information on options outstanding and exercisable as at:

Exercise Price	July 31, 2019			July 31, 2018		
	Weighted average remaining contractual life (in years)	Number of options outstanding	Number of vested and exercisable options	Weighted average remaining contractual life (in years)	Number of options outstanding	Number of vested and exercisable options
\$0.51	4.72	4,625,000	2,149,998	–	–	–
\$0.92	–	–	–	1.86	380,000	380,000
\$1.34	–	–	–	0.25	200,000	200,000
\$1.50	0.46	150,000	150,000	1.46	200,000	200,000
\$1.65	0.26	50,000	50,000	1.26	100,000	100,000
\$2.00	1.26	50,000	50,000	2.26	50,000	33,333
Outstanding, end of year	4.51	4,875,000	2,399,998	1.37	930,000	913,333

The following table summarized activity under the Company's equity compensation plan for the fiscal years ended:

	July 31, 2019		July 31, 2018	
	Number	Weighted average exercise price	Number	Weighted average exercise price
Outstanding, beginning of year	930,000	\$ 1.27	930,000	\$ 1.27
Granted	4,625,000	0.51	–	–
Exercised	–	–	–	–
Expired	680,000	1.14	–	–
Outstanding, end of year	4,875,000	\$ 0.57	930,000	\$ 1.27
Vested and exercisable, end of year	2,399,998	\$ 0.57	913,333	\$ 1.26

The fair value of each option granted was estimated on the date of grant using the Black-Scholes option pricing model.

The fair value of each option granted was estimated on the date of grant using the Black-Scholes option pricing model with the following assumptions:

Grant Date	Number of options granted	Volatility factor	Risk free interest rate	Dividend rate	Expected life	Vesting period	Fair value of options granted
May 27, 2019	4,625,000	66.76%	1.49%	nil	5 years	2 years	\$ 666

For fiscal 2019, 2,166,665 options vested (2018 – 16,666) with a fair value of \$311,646 (2018 – \$20,235).

**6. Commitments, contingent liabilities and contingent assets**

The Company's commitments are summarized as follows:

	2020	2021	2022	2023	2024	2025 and beyond	Total
V-DOS47 co-funded project	\$ 1,365	\$ 2,382	\$ 1,163	\$ 356	\$ –	\$ –	\$ 5,266
Clinical research organizations	452	–	–	–	–	–	452
Royalty and in-licensing	20	20	20	20	20	60	160
Financial & investor relations	131	–	–	–	–	–	131
Collaborative research organizations	88	–	–	–	–	–	88
Facility leases	66	–	–	–	–	–	66
Contract manufacturing organizations	17	–	–	–	–	–	17
	\$ 2,139	\$ 2,402	\$ 1,183	\$ 376	\$ 20	\$ 60	\$ 6,180

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#### *Grant Funding Agreement (the "Agreement") with the Polish National Centre for Research and Development ("PNCRD")*

Based on the Agreement, certain expenditures made commencing on March 1, 2016 are eligible for reimbursement. Total costs associated with the V-DOS47 development program under the Agreement is PLN19,794,416 (\$6,756,000). Of the total project costs, the PNCRD will reimburse the Company's Polish subsidiary approximately 80% to 60% of eligible expenditures, depending on the stage of development plus a flat 17% for overhead costs, on the total government funded eligible portion of PLN12,506,956 (\$4,269,000). The Company's subsidiary is required to spend PLN4,437,460 (\$1,515,000) towards the project plus an additional PLN2,850,000 (\$973,000) for manufacturing and clinical trial documentation costs, all of which, are not eligible for subsidies from the PNCRD. Subsidized amounts may be drawn in advance or on a reimbursement basis, with varying criteria and timelines for justification of claims being made by the Company's subsidiary. Of the \$5,266,000 in total future commitments towards this program, the Company is projecting that a total of approximately \$2,543,000 will be reimbursed by the PNCRD. The Agreement may be terminated by either party upon one month's written notice clearly spelling out the reasons for which the Agreement is being terminated. In certain cases of termination, the Subsidiary may be obligated to return the received financial support in full within fourteen days of the day notice is served, with interest. As at July 31, 2019, the Company has received subsidies from the PNCRD of approximately \$1,289,000. (also see *Note 11 – Government Grant*).

#### *Clinical Research Organization ("CRO") Commitments*

The Company has CRO supplier agreements in place for clinical research services related to the management of the Company's clinical stage programs. As at July 31, 2019, the Company accrued \$581,000 (2018 – \$873,000) for services provided by these CRO's.

#### *Royalty and in-licensing commitments*

Pursuant to an agreement dated April 28, 2005 with the National Research Council of Canada (the "NRC"), the Company is required to pay a royalty to the NRC of 3% of net sales, with a minimum royalty of \$10,000 per annum generated from the use of a certain antibody to target cancerous tissues of the lung. In addition to the royalty payments, the Company is also required to make certain milestone payments: \$25,000 upon successful completion of Phase I clinical trials; \$50,000 upon successful completion of Phase IIb clinical trials; \$125,000 upon successful completion of Phase III clinical trials; and \$200,000 upon receipt of market approval by regulatory authority. L-DOS47 is subject to this agreement.

Pursuant to an agreement dated September 22, 2016 with the National Research Council of Canada, the Company is required to pay a royalty to the NRC of 3% of net sales, with a minimum royalty of \$10,000 per annum generated from the use of a certain antibody to target cancerous tissues of the lung. In addition to the royalty payments, the Company is also required to make certain milestone payments for the first licensed product: \$25,000 upon successful completion of Phase I clinical trials; \$50,000 upon successful completion of Phase IIb clinical trials; \$150,000 upon successful completion of Phase III clinical trials; \$200,000 upon receipt of first regulatory approval by a regulatory authority; and \$200,000 upon receipt of a second regulatory approval by a regulatory authority. For the development of each subsequent licensed product: \$200,000 upon receipt of first regulatory approval by a regulatory authority; and \$200,000 upon receipt of a second regulatory approval by a regulatory authority. As it relates to sub-licensing arrangements, the Company is required to pay the NRC 33% of any sub-licensing revenues received. The anti-CEACAM6 single domain antibody 2A3 is subject to this agreement. As at July 31, 2019 the Company has \$nil (2018 – \$nil) in financial obligations outstanding related to royalty and in-licensing commitments.

#### *Financial and investor relations agreements*

The Company has agreements with both ACM Alpha Consulting Management EST ("ACMest") and ACM Alpha Consulting Management AG ("ACMag"). The agreements are both effective July 2, 2018 and can be terminated upon ninety days notice. Mr. Kandziora is President of ACMest and acted as Observer on the Board of Directors of the Company up until August 22, 2019 in addition to also being on the Supervisory Board of the Company's wholly owned Polish subsidiary, Helix Immuno-Oncology S.A. Mrs. Kandziora is President of ACMest and was Corporate Secretary up until August 22, 2019.

The agreement with ACMest includes the following provision:

- a) a monthly fee for investor relations services of CHF33,000 and reimbursement of certain expenses.

The agreement with ACMag includes the following provision:

- a) a 12.5% fee on the gross proceeds on any capital raised up to six months after the termination of this agreement from an ACMest introduced investor with residency outside Canada and the U.S.;

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At July 31, 2019, the Company accrued \$353,000 and \$713,000 for services provided by ACMest and ACMag, respectively (2018 – \$410,000 and \$125,000, respectively). Also see *Note 9 – Related Party Transactions*.

*Collaborative Research Organization Service Commitments*

The Company has collaborative research agreements relating to its L-DOS47 and CAR-T programs. The nature of the services includes assay development, animal studies and imaging and ongoing future clinical sample analysis. As at July 31, 2019, the Company accrued \$118,000 (2018 – \$62,000) for collaborative research organizations services it had received.

*Operating lease commitments*

The Company is committed to pay \$66,000 under three facility lease agreements with lease terms up to 12 months.

*Contract Manufacturing Organization (“CMO”) commitments*

The Company has CMO supplier agreements related to the Company’s L-DOS47 program, all of which are inter-dependant with manufacturing of L-DOS47. As at July 31, 2019, the Company accrued \$5,000 (2018 – \$65,000) for CMO services and has not committed to any additional services.

*Non-disclosure agreement (“NDA”)*

The Company and its wholly owned subsidiary signed two separate non-disclosure agreements which included specific wording as to the use of data for purposes other than those specified or in the event of disclosure to a third party of all or a part of certain data. Under the NDA, and the event of a breach, the Company would be liable for a contractual penalty of PLN500,000 for each case of breach under each of the NDA’s.

*Legal proceedings and claims*

There are two old claims made against the Company in the normal course of operations that remain pending at the end of fiscal 2019. Management believes that these claims are without merit. These actions are not sufficiently advanced for the outcome to be presently determinable and, accordingly, no provision for these claims have been made in these financial statements.

**7. Capital risk management**

The Company’s main objectives when managing capital are to ensure sufficient liquidity to finance research and development activities, clinical trials, ongoing administrative costs, working capital and capital expenditures. The Company includes cash in the definition of capital. The Company endeavours not to unnecessarily dilute shareholders when managing the liquidity of its capital structure.

Since inception, the Company has financed its operations from public and private sales of equity, the exercise of warrants and stock options, and, to a lesser extent, from interest income from funds available for investment, government grants and investment tax credits. Since the Company does not have net earnings from its operations, the Company’s long-term liquidity depends on its ability to access capital markets, which depends substantially on the success of the Company’s ongoing research and development programs, as well as capital market conditions and availability.

The Company does not currently have enough cash reserves to fully fund its clinical trials nor does the Company have sufficient cash reserves to meet anticipated cash needs for working capital and capital expenditures through at least the next twelve months.

The Company does not have any credit facilities and is therefore not subject to any externally imposed capital requirements or covenants.

**8. Financial instruments and risk management**

The Company has classified its financial instruments as follows:

	2019		2018	
	Fair Value	Fair value hierarchy	Fair Value	Fair value hierarchy
Cash	\$ 206	Level 1	\$ 366	Level 1

*Fair value hierarchy*

Financial instruments recorded at fair value on the balance sheet are classified using a fair value hierarchy that reflects the significance of the inputs used in making the measurements. The fair value hierarchy has the following levels:

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- a. Level 1 reflects valuation based on quoted prices observed in active markets for identical assets or liabilities;
- b. Level 2 reflects valuation techniques based on inputs that are quoted prices of similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; inputs other than quoted prices used in a valuation model that are observable for that instrument; and inputs that are derived principally from or corroborated by observable market data by correlation or other means; and
- c. Level 3 reflects valuation techniques with significant unobservable market inputs.

A financial instrument is classified to the lowest level of the hierarchy for which a significant input has been considered in measuring fair value.

The financial instrument in the Company's financial statements, measured at fair value, is cash.

*Fair value*

The fair value of financial instruments as at July 31, 2019 and 2018 approximates their carrying value because of the near-term maturity of these instruments.

*Financial risk management*

The Company is exposed to a variety of financial risks by virtue of its activities: market risk (including currency and interest rate risk), credit risk and liquidity risk. The overall risk management program focuses on the unpredictability of financial markets and seeks to minimize potential adverse effects on financial performance.

Risk management (the identification and evaluation of financial risk) is carried out by the finance department, in close cooperation with management. The finance department is charged with the responsibility of establishing controls and procedures to ensure that financial risks are mitigated in accordance with the approved policies. The Company's Board of Directors has the overall responsibility for the oversight of these risks and reviews the Company's policies on an ongoing basis to ensure that these risks are appropriately managed.

*Market risk*

Market risk is the risk that changes in market prices, such as interest rates and foreign exchange rates, will affect the Company's income or the value of its financial instruments.

*Currency risk*

The Company has international transactions and is exposed to foreign exchange risks from various currencies, primarily the Euro and U.S. dollar. Foreign exchange risks arise from the foreign currency translation of the Company's integrated foreign operation in Poland. In addition, foreign exchange risks arise from purchase transactions, as well as recognized financial assets and liabilities denominated in foreign currencies.

Balances in foreign currencies at July 31, are as follows:

	2019			2018		
	EUR	USD	PLN	EUR	USD	PLN
Cash	–	–	330	33	–	241
Accounts receivable	–	–	143	–	–	126
Accounts payable	(401)	(563)	(232)	(412)	(334)	(299)
Accruals	(25)	–	(107)	–	(63)	(69)
Net foreign currencies	(426)	(563)	(134)	(379)	(397)	(1)
Closing exchange rate	1.4627	1.3148	0.3413	1.5239	1.3017	0.3568
Impact of 1% change in exchange rate	+/- 6	+/- 7	+/- 0	+/- 6	+/- 5	+/- 0

Any fluctuation in the exchange rates of the foreign currencies listed above could have an impact on the Company's results from operations; however, they would not impair or enhance the ability of the Company to pay its foreign-denominated expenses.

*Interest rate risk*

Interest rate risk is the risk that future cash flows of a financial instrument will fluctuate because of changes in interest rates, which are affected by market conditions. The Company is exposed to interest rate risk arising from fluctuations in interest rates received on its cash and cash equivalents. The Company does not have any credit facilities and is therefore not subject to any debt related interest rate risk.

**HELIX BIOPHARMA CORP.****Notes to Consolidated Financial Statements**

Years ended July 31, 2019 and 2018

(Tabular dollar amounts in thousands of Canadian dollars)

The Company manages its interest rate risk by maximizing the interest income earned on excess funds while maintaining the liquidity necessary to conduct its operations on a day-to-day basis. Any investment of excess funds is limited to risk-free financial instruments. Fluctuations in the market rates of interest do not have a significant impact on the Company's results of operations due to the relatively short-term maturity of any investments held by the Company at any given point in time and the low global interest rate environment. The Company does not use derivative instruments to reduce its exposure to interest rate risk.

*Credit risk*

Credit risk is the risk of a financial loss to the Company if a customer or counterparty to a financial instrument fails to meet its contractual obligation.

The table below breaks down the various categories that make up the Company's accounts receivable balances as at July 31:

	2019	2018
Government related – HST/VAT	\$ 82	\$ 73
Research and development investment tax credits	121	233
Other	87	9
	<b>\$ 290</b>	<b>\$ 315</b>

*Liquidity risk*

Liquidity risk is the risk that the Company will not be able to meet its obligations as they come due. Since inception, the Company has mainly relied on financing its operations from public and private sales of equity. The Company does not have any credit facilities and is therefore not subject to any externally imposed capital requirements or covenants.

The Company manages its liquidity risk by continuously monitoring forecasts and actual cash flow from operations and anticipated investing and financing activities.

The Company's cash reserves of \$206,000 as at July 31, 2019 are insufficient to meet anticipated cash needs for working capital and capital expenditures through the next twelve months, nor are they sufficient to see the current research and development initiatives through to completion. To the extent that the Company does not believe it has sufficient liquidity to meet its current obligations, management considers securing additional funds primarily through equity arrangements to be of utmost importance.

The Company's long-term liquidity depends on its ability to access the capital markets, which depends substantially on the success of the Company's ongoing research and development programs, as well as economic conditions relating to the state of the capital markets generally. Accessing the capital markets is particularly challenging for companies that operate in the biotechnology industry.

The following are the contractual maturities of the undiscounted cash flows of financial liabilities as at July 31:

	2019			2018		
	Carrying amount	Less than one year	Greater than one-year	Carrying amount	Less than one year	Greater than one-year
Accounts payable	\$ 3,040	\$ 3,040	\$ –	\$ 1,992	\$ 1,992	\$ –
Accrued liabilities	1,057	1,057	–	644	644	–

This table only covers liabilities and obligations relative to financial instruments and does not anticipate any income associated with assets.

**9. Related party transactions**

The following table summarizes key management personnel compensation for the fiscal years ended:

	2019	2018
Compensation	\$ 767	\$ 695
Stock-based compensation	291	–
	<b>\$ 1,058</b>	<b>\$ 695</b>

An amount of \$225,000 was advanced to the Company by an officer. The advance is interest bearing at 4% per annum and is repayable, on demand, no later than August 30, 2019. The principle amount along with interest, was repaid, as per terms. The advance is included in accruals as at July 31, 2019.

**HELIX BIOPHARMA CORP.****Notes to Consolidated Financial Statements**

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(Tabular dollar amounts in thousands of Canadian dollars)

The following table summarizes non-management directors' compensation for the fiscal years ended:

	2019	2018
Directors' fees	\$ 162	\$ 212
Stock-based compensation	24	–
	\$ 186	\$ 212

The following table summarizes the total compensation for both ACMest and ACMag for the fiscal years ended:

	2019	2018
Finder's fee commissions	\$ 940	\$ 1,065
Financial and investor relations consulting fee	571	516
	\$ 1,511	\$ 1,581

The Company has agreements with both ACM Alpha Consulting Management EST ("ACMest") and ACM Alpha Consulting Management AG ("ACMag"). The agreements are both effective July 2, 2018 and can be terminated upon ninety days notice. Mr. Kandziora is President of ACMest and acted as Observer on the Board of Directors of the Company up until August 22, 2019 in addition to also being on the Supervisory Board of the Company's wholly owned Polish subsidiary, Helix Immuno-Oncology S.A. Mrs. Kandziora is President of ACMest and was Corporate Secretary up until August 22, 2019. (also see *Note 6 – Commitments, contingent liabilities and contingent assets*).

Related party transactions are at arm's length and recorded at the amount agreed to by the related parties.

**10. Research and development projects**

As at July 31, 2019, the Company has incurred research and development expenditures primarily on the L-DOS47 research and development program.

Included in research and development expenditures are costs directly attributable to the various research and development functions and initiatives the Company has underway and include: salaries; bonuses; benefits; stock-based compensation; depreciation of property, plant and equipment; patent costs; consulting services; third party contract manufacturing, third party clinical research organization services; and all overhead costs associated with the Company's research facilities.

The following table outlines research and development costs expensed and investment tax credits for the Company's significant research and development projects for the fiscal years ended July 31:

	2019	2018
L-DOS47	\$ 3,530	\$ 4,893
V-DOS47	478	457
CAR-T	333	318
Corporate research and development expenses	528	432
Trademark and patent related expenses	435	440
Stock-based compensation expense	198	10
Depreciation expense	109	141
Research and development investment tax credits	(126)	(132)
Polish government grant subsidy (V-DOS47)	(479)	(475)
	\$ 5,006	\$ 6,084

**11. Government grant**

On July 21, 2016, the Company announced that a grant funding agreement was entered into by the Company's wholly owned subsidiary in Poland and the PNCRD, whereby certain expenditures made commencing on March 1, 2016. Subsidized amounts may be drawn in advance or on a reimbursement basis, with varying criteria and timelines for justification of claims being made by the Company's subsidiary. The Agreement may be terminated by either party upon one month's written notice and must also state the grounds for which the Agreement is being terminated. In certain cases of termination, the Company's Polish subsidiary may be obligated to return the received financial support in full within fourteen days of the day notice is served, with interest (also see *Note 6 – Commitments, contingent liabilities and contingent assets*).

**HELIX BIOPHARMA CORP.****Notes to Consolidated Financial Statements**

Years ended July 31, 2019 and 2018

(Tabular dollar amounts in thousands of Canadian dollars)

**12. Operating, General and Administration**

The following table outlines operating, general and administration costs expensed a for the following periods:

	2019	2018
Wages and benefits	\$ 759	\$ 665
Director fees	162	214
Third-party advisors	1,068	1,089
Other general and administrative	316	468
Stock-based compensation expense	164	–
Depreciation expense	17	26
	<b>\$ 2,486</b>	<b>\$ 2,462</b>

**13. Income taxes**

The Company recognizes deferred tax assets and liabilities for expected future tax consequences of temporary differences between the carrying amounts and the tax basis of assets and liabilities and certain carry-forward balances. The Company's effective income tax rate in fiscal 2019 is 25.8% (2018 – 26.7%).

The tax effects of temporary differences for the Company that gives rise to the unrecorded deferred tax asset presented in the following table:

	2019	2018
Deferred tax assets:		
Scientific Research & Experimental Development expenditure pool	\$ 12,716	\$ 12,851
Non-capital losses and other credits carried forward	23,012	22,267
Capital losses carried forward	156	161
Excess of tax basis over book basis of capital assets	1,757	1,686
Deductible share issue costs	629	634
	<b>\$ 38,270</b>	<b>\$ 37,599</b>

*Current income tax loss and non-capital tax loss carry forwards*

As at July 31, 2019, the Company has Canadian tax losses that can be carried forward of approximately \$89,182,000 (2018 – \$83,418,000) and are available until 2039 as follows:

2025	\$ 862
2026	2,113
2027	2,904
2028	2,438
2029	9,188
2030	6,552
2031	6,792
2032	13,242
2033	2,437
2034	6,727
2035	7,256
2036	7,883
2037	7,884
2038	7,152
2039	5,752
	<b>\$ 89,182</b>

*Scientific Research & Experimental Development expenditures ("SR&ED")*

Under the *Income Tax Act* (Canada), certain expenditures are classified as SR&ED expenditures and are grouped into a pool for tax purposes. This expenditure pool can be carried forward indefinitely and deducted in full in any subsequent year. The SR&ED expenditure pool at July 31, 2019 is approximately \$49,280,000 (2018 – \$48,144,000).

*Investment tax credits*

The Company has also earned investment tax credits in Canada, on eligible SR&ED expenditures at July 31, 2019 of approximately \$11,681,000 (2018 – \$11,514,000), which can offset Canadian income taxes otherwise payable in future years up to 2039. Investment tax credits are accounted for as a reduction of the related expenditure for items of a current nature and a

**HELIX BIOPHARMA CORP.****Notes to Consolidated Financial Statements**

Years ended July 31, 2019 and 2018

(Tabular dollar amounts in thousands of Canadian dollars)

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reduction of the related asset cost for items of a capital nature, provided that the Company has reasonable assurance that the tax credits will be realized. During the year, the Company received cash refundable investment tax credits related to prior years in the amount of \$238,000 (2018 – \$332,000). At July 31, 2019, cash refundable investment tax credits total \$121,000 (2018 – \$234,000). The research and development investment tax credits recorded are based on management's estimates of amounts expected to be recovered and are subject to audit by the taxation authorities and, accordingly, these amounts may vary. Federal investment tax credits are non-refundable to the Company. Refundable investment tax credits reflect eligible SR&ED expenditures incurred in Ontario, Alberta and Quebec.

*Tax - Poland*

As at July 31, 2019, the Company has Poland tax losses that can be carried forward of approximately PLN3,231,000 (2018 – PLN1,516,000) and are available until 2022 as follows:

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2020	37
2021	212
2022	871
2023	1,000
2024	1,111
	<hr/>
	\$ 3,231

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**14. Subsequent Event**

On August 21, 2019, the Company completed a private placement financing of 13,725,500 units of the Company and the disposition of a 25% stake of its wholly owned Polish subsidiary for \$7,000,005. Each unit comprises one common share and one common share purchase warrant. Each common share purchase warrant will entitle the holder to purchase one common share at an exercise price of \$0.72 and will have an expiry of five years from the date of issuance.







# Corporate Information

## DIRECTORS AND OFFICERS

Slawomir Majewski, M.D.  
Chairman

Artur Gabor  
Director

Ireneusz Fafara  
Director

Heman Chao, Ph.D.  
Director  
Chief Executive & Scientific Officer

Photios (Frank) Michalargias, CPA, CA  
Chief Financial Officer

## SCIENTIFIC ADVISORY BOARD

Robert J. Gillies, Ph.D

Kazimierz Roszkowski-Sliz, M.D., Ph.D.

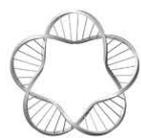
Heman Chao, Ph.D.

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