

## **MANAGEMENT'S RESPONSIBILITY FOR FINANCIAL REPORTING**

This Management's Discussion and Analysis ("MD&A") for ChitogenX Inc. (previously Ortho Regenerative Technologies Inc., the "Corporation" or "ChitogenX") provides an overview of the Corporation's operations, performance and financial results for the second quarter of our 2023 fiscal year ended on July 31, 2022 and compares those of the same period in 2022 fiscal year. This MD&A is the responsibility of management and has been reviewed and approved by its Board of Directors. The Board of Directors is responsible for ensuring that management fulfills its responsibilities for financial reporting and is ultimately responsible for reviewing and approving the MD&A. The Board of Directors carries out this responsibility principally through its Audit Committee. The Audit Committee is appointed by the Board of Directors and is comprised of financially literate directors. This report was reviewed by the Corporation's Audit Committee and approved by ChitogenX's Board of Directors on September 28, 2022.

This document should be read in conjunction with the unaudited financial statements and notes thereto for the second quarter of our 2023 fiscal year ended on July 31, 2022, which have been prepared in accordance with International Financial Reporting Standards ("IFRS"). Further information about ChitogenX Inc., is available online on SEDAR at [www.sedar.com](http://www.sedar.com).

Unless otherwise noted, all amounts are presented in thousands of Canadian dollars, except for share and per share amounts.

### **Going concern**

This MD&A has been prepared on a going-concern basis, which implies that the Corporation will continue realizing its assets and discharging liabilities in the normal course of business for the foreseeable future. As reflected in the annual audited financial statements, the Corporation is still a clinical stage R&D company and has not yet achieved profitability. During the second quarter ended on July 31, 2022, the Corporation incurred a net loss of \$2.2 million, and used cash in operations of \$2.0 million. As at the end of the second quarter of fiscal year 2023, the Corporation had a working capital deficit of \$3.8 million. Consequently, the Company's performance raises significant doubt about the Company's ability to continue as a going concern.

Accordingly, the ability of the Corporation to realize the carrying value of its assets and continue operations as a going concern is dependent upon its ability to obtain additional financing and ultimately on generating future profitable operations. Management anticipates that the continued advancement of its lead Ortho-R program will facilitate securing additional funds from existing and new investors. There is no assurance that any fund-raising initiatives will be successful. Factors within and outside the Corporation's control could have a significant bearing on its ability to obtain additional financing. The unaudited financial statements as at and for the quarter ended July 31, 2022, do not include any adjustments related to the carrying values and classifications of assets and liabilities that would be necessary should the Corporation be unable to continue as a going concern.

### **Covid-19 pandemic**

The outbreak of a novel strain of coronavirus, identified as "COVID-19", was declared a global pandemic by the World Health Organization on March 11, 2020, and is still adversely affecting the global economy despite the efforts by local governments to vaccinate their populations and reduce the economic adverse effects of COVID-19. In response, many countries have required entities to limit or suspend business operations and implemented travel restrictions and quarantine measures. Some non-essential activities were canceled or delayed due to COVID-19. These measures have disrupted the activities of many entities and have led to significant volatility in the global markets. The Corporation continues to monitor and actively manage the developing impacts from COVID-19, including but not limited to, the effect on the Corporation's clinical development phases, potential future effects on its assets, cash flow and liquidity, and will continue to assess impacts to the Corporation's operations, going concern assumption, and the value of assets and liabilities reported in its financial statements. Elective surgeries levels are key to ensure enrollment in our US Phase I/II clinical trial on rotator cuff tear repair. Based on recent interactions with the clinical centers involved in the clinical trial, scheduling and rate of elective surgeries are back to pre-pandemic levels and consequently should not impact patient enrollment.

### **Non-IFRS Financial Measures**

This MD&A refers to certain non-IFRS measures. Management uses these non-IFRS financial measures for purposes of comparison to prior periods and development of future projections and earnings growth prospects. This information is also used by management to measure the results of ongoing operations and in analyzing our business performance and trends. These measures are not recognized measures under IFRS, do not have a standardized meaning prescribed by IFRS and are therefore unlikely to be comparable to similar measures presented by other companies. Rather, these measures are provided as additional information to complement those IFRS measures by providing further understanding of our results of operations from management's perspective. Accordingly, they should not be considered in isolation nor as a substitute for analysis of our financial information reported under IFRS. We use a non-IFRS measure, "EBITDA Loss", to provide supplemental measures of our operating performance and thus highlight trends in our core business that may not otherwise be apparent when relying solely on IFRS financial measures. EBITDA Loss is defined as net loss before (i) provision for (recovery of) income taxes; (ii) interest (income) expense and other financing costs; (iii) depreciation; and (iv) amortization of intangible assets.

**Management's Discussion and Analysis for the three and six months ended July 31, 2022***(In thousands of Canadian dollars, except for units, share and per share amounts)***Cautionary note regarding forward-looking statements**

This MD&A may contain some forward-looking information as defined under applicable Canadian securities laws. Forward looking information can generally be identified using forward-looking terminology such as “may”, “anticipate”, “expect”, “intend”, “estimate”, “continue” or similar terminology. Forward looking information is subject to various known and unknown risks and uncertainties, many of which are beyond the ability of the Corporation to control or predict, that may cause the Corporation's actual results or performance to be materially different from actual results and are developed based on assumptions about such risks and other factors set out herein.

**GLOSSARY TERMS****Calendar & Financial**

|            |   |
|------------|---|
| CDU        | Convertible Debenture Units   |
| EBITDA (L) | EBITDA Loss   |
| FVA        | Fair Value Adjustment   |
| FY         | Fiscal Year   |
| G&A        | General and Administrative  |
| IR         | Investors Relations   |
| ITC        | Investment tax credits  |
| NCDUs      | Non-Convertible Debenture Units   |
| Q2-23      | Second quarter FY-23  |
| Q1-23      | First quarter FY-23   |
| Q4-22      | Fourth quarter FY-22  |
| Q3-22      | Third quarter FY-22   |
| Q2-22      | Second quarter FY-22  |
| Q1-22      | First quarter FY-22   |
| Q4-21      | Fourth quarter FY-21  |
| Q3-21      | Third quarter FY-21   |
| SR&ED      | Scientific Research and Experimental Development Expenses                 |
| R&D        | Research and Development  |
| YTD        | Year to date  |
| YE         | Year-end  |
| W/C        | Working Capital, defined as short-term assets less short-term liabilities |

**Corporate & Operations**

|               |   |
|---------------|---|
| API           | Active Pharmaceutical Ingredient                                      |
| CHGX          | ChitogenX Inc.<br>(Previously Ortho Regenerative Technologies Inc.)   |
| CMC           | Chemistry Manufacturing and Controls                                  |
| cGMP          | current Good Manufacturing Practice                                   |
| CMO           | Contract Manufacturing Organization                                   |
| CSE           | Canadian Securities Exchange  |
| FDA           | US Food and Drug Administration                                       |
| IND           | Investigational New Drug application with the FDA                     |
| MCRA          | MCRA, LLC, a US based orthopedic specialty CRO                        |
| MRI           | Magnetic Resonance Imaging  |
| MTA           | Material Transfer Agreement   |
| ORTHO-C       | Proprietary biopolymer for Articular Cartilage repair                 |
| ORTHO-M       | Proprietary biopolymer for Proprietary Biopolymer for Meniscus repair |
| ORTHO-R       | Proprietary biopolymer for Rotator cuff repair                        |
| ORTHO-V       | Proprietary biopolymer for Osteoarthritis healing                     |
| OTCQB         | US over-the-counter venture trading market                            |
| Polytechnique | Ecole Polytechnique de Montreal                                       |
| PRP           | Platelet-rich plasma  |
| Pre-RFD       | Pre-Request for Designation   |

**OVERVIEW OF THE BUSINESS AND BUSINESS STRATEGY**

ChitogenX is a clinical stage biotech company incorporated under the Canada Business Corporations Act. The Corporation's head office, principal address and registered office is located at 16667 Hymus Blvd., Kirkland, Quebec, Canada and its wholly owned US subsidiary, OR4102022 Inc. has been incorporated on April 20, 2022 and is located at 12 Penns Trail in Newtown, Pennsylvania, USA. The Corporation's shares are publicly traded on the CSE under the symbol “CHGX”, as well as on the United States OTCQB market under the symbol “CHNXF”.

On September 7, 2022, The Corporation changed its corporate name from Ortho Regenerative Technologies Inc. to ChitogenX Inc. to better reflect the Company's expanded clinical and commercial opportunities, mission, values, and core competencies. The Corporation is developing products in the regenerative medicine market, one of the most dynamic and promising sectors of the health care industry.

**Regenerative Medicine Overview**

The concept of regenerative medicine is to provide us with tools to return anatomy and physiology to a more normal appearance and behaviour. Although there are many definitions, of what constitutes regenerative medicine, the following is succinct:

Regenerative Medicine is an emerging interdisciplinary field of research and clinical applications focused on the repair, replacement or regeneration of cells, tissues or organs to restore impaired function resulting from any cause, including congenital defects, disease, trauma and aging. It uses a combination of several technological approaches that moves it beyond traditional transplantation and replacement therapies. These approaches may include, but are not limited to, the use of soluble molecules, gene therapy, stem cell transplantation, tissue engineering and the reprogramming of cell and tissue types.

Combinations of these approaches can 1) improve the natural healing process in areas of the body it is needed most, 2) take over the function of a permanently damaged organ, 3) heal or repair a damaged organ or tissue, or 4) deliver healing “accelerators” chemicals that might inspire repair to specific damaged areas of the body.

**Management’s Discussion and Analysis for the three and six months ended July 31, 2022**

(In thousands of Canadian dollars, except for units, share and per share amounts)

Regenerative medicine is a relatively new and rapidly expanding field that brings together experts in biology, chemistry, materials and computer science, engineering, genetics, robotics, and other fields to find solutions to some of the most challenging medical problems faced by humankind. We believe ChitogenX is at the forefront of this rapidly expanding field.

*The Global Regenerative Medicine Market was estimated at \$US9B market in 2021 and is projected to grow at 22.8% CAGR through 2030. It is one of the most dynamic markets in medicine today. The musculoskeletal and wound healing segment accounted for about 60% share of the regenerative medicine market in 2021. Cell therapies are used in the treatment of musculoskeletal diseases such as bone tissue replacement, cartilage, tendon, and ligament repair and replacement. ChitogenX is well positioned to become the preferred regenerative medicine delivery system for this rapidly growing part of the industry.*

Regenerative medicine is applicable in cardiovascular, oncology, dermatology, musculoskeletal, wound healing, ophthalmology, neurology, and others. The musculoskeletal application segment accounted for the largest share in 2021, whereas cardiovascular is expected to be the fastest-growing segment, registering a CAGR of 24.3% during the forecast period (2022-2030).

**Problem & Solution**

The delivery of a tissue scaffold, cellular or molecular therapy or any combination thereof makes a fundamental assumption; that the substance(s) will stay where they were placed and function as desired; if they wander off-target, the desired enhanced healing might not occur and furthermore, the potential exists for off-target effects.

Providing a reliable, biologically safe transport mechanism that would allow the targeted body system to receive the regenerative material to aid in body system repair is, therefore, a mission-critical goal and a problem that requires solving for the regenerative medicine market to meet its projected growth estimates.

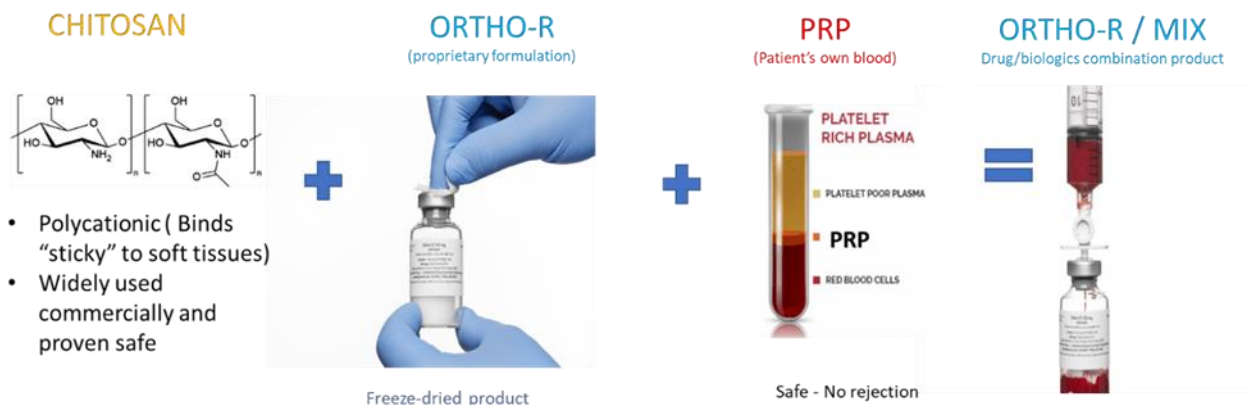
ChitogenX has acquired such a solution from the Polytechnique at the University of Montreal. Our Patented **Drug/ Biologic/ Combination** technology platform, is a muco-adhesive CHITOSAN based biopolymer matrix, specifically designed to be combined with biologics such as Platelet-Rich Plasma (PRP) or Bone Marrow Aspirate Concentrate (BMAC), to augment and accelerate the regeneration of new tissue in various potential indications.

**BUSINESS STRATEGY**

1. Perform Rotator Cuff Repair proof of concept phase I/II clinical trial program to establish regenerative platform delivery mechanism.
2. Leverage Polytechnique partnership to obtain non-dilutive grants to drive proof of concept in multiple potential indications
3. Leverage our proprietary platform beyond orthopedic applications by seeking R&D and/or development partners for each high potential application
  - o Leverage strong global method and composition patents
  - o Leverage initial IND from FDA to initiate multiple development programs
4. Position ChitogenX to commercialize its proprietary medical grade chitosan to the research-based healthcare industry to generate cashflow for the company in 18-24 months.

**1. Perform Rotator Cuff Repair proof of concept phase I/II clinical trial program to establish regenerative platform**

**ORTHO R** is formulated and designed to improve the healing of body tissues beginning with sports and occupation related injuries to tendons, meniscus, and ligaments.



**Management's Discussion and Analysis for the three and six months ended July 31, 2022**

*(In thousands of Canadian dollars, except for units, share and per share amounts)*

ORTHO-R is a patent-protected freeze-dried formulation of a biopolymer, a lyoprotectant and a clot activator. ORTHO-R is solubilized in platelet-rich plasma ("PRP") to form an injectable combination of the chitosan scaffold and the PRP-biologic, and an FDA designated bioactive implant that coagulate after implantation. In vitro testing has allowed the Corporation to identify specific formulations that meet the following criteria for optimal commercial products:

- (i) rapid and complete solubilization in PRP;
- (ii) biopolymer-PRP mixtures having paste-like handling properties desired by surgeons;
- (iii) biopolymer-PRP mixtures that coagulate rapidly to form soft tissue-adherent Drug-Biologics hybrid implants;
- (iv) biopolymer-PRP biologics implants that are mechanically stable and resist platelet-mediated clot retraction; and
- (v) dispersion of the biopolymer in the implants that is homogenous for optimal biodegradability.

The polymer-biologics hybrid mix, designated as drug/biologic combination product by the FDA, but may be considered a medical device by other regulatory jurisdictions, can be directly applied at the site of injury by a surgeon during a routine operative procedure without significantly extending the time of surgery and without further intervention. A US FDA IND was granted in December 2021, to start our proof-of-concept Phase I/II Rotator Cuff Tear Repair clinical trial at 10 US sites.

The use of ORTHO-R as an adjunct to standard of care suturing techniques produced promising histological findings in small and large animal experimental models, which is hoped to translate to faster and superior rotator cuff repair in humans. No adverse events were found in any of the above-mentioned animal studies, which suggests a high level of safety. Progress made during the recent quarters have set the stage for achievements of major corporate/regulatory/strategic milestones over the current and upcoming calendar years.

**Market Opportunity:** *(Source: Pearl Diver HealthCare Research, iData Research.)* **for first clinical application**

Close to 700K shoulder rotator cuff repairs are performed in North America every year with an unfortunate 20% to 90% failure rate. ORT has already initiated its FDA designated Phase I/II study giving it the regulatory lead in the US for launching the first FDA approved drug/biologic combination for augmenting the performance of the standard of care surgical shoulder cuff repair.

The orthopedic and sports medicine soft tissue repair market is a \$6B+ global market. The ORTHO-R product is first targeting the following soft tissue repair indications: 1) rotator cuff Tear repair: 4M injuries and 700K surgeries/year (50%+ failure rate) in USA alone, 2) Tendinopathy, 11M injuries/year, and 3) Meniscus Tear repair: 1.2M injuries/year and 200K+ surgeries/year (40% failure rate) in USA alone. Standard of care for these injuries is surgery alone. The orthopedic community are looking for better treatments to improve patient outcomes and reduce procedure failure rate.

This market opportunity is further enhanced by the fact that surgeons all over the world know that soft tissue such as ligaments, tendons and meniscus are not well vascularized and thus when repaired with the standard of care (sutures, anchors, and staples) results in healing principally with scar tissue which is more fragile and susceptible to re-tear than native tissue. Given the belief by many that platelet rich plasma (PRP) improves the quality of tissue healing, surgeons have vocalized a desire to find a way to make PRP resident to the surgical repair site, so that the PRP can trigger the tissue repair cascade to these troublesome non-vascularized soft tissues. Surgeons have been using PRP for over a decade but are frustrated by the inability for the PRP alone to establish residency on the surgical repair site due to its highly liquid nature. ORTHO-R is specifically designed to overcome the residency issue due to its unique and patented composition. Therefore, once approved, a ready-made and very large market can be rapidly satisfied thus reducing go to market investment by the Corporation, development partner or acquirer of our technology.

Market is looking for improving outcome of standard of care BUT this cannot be done at the expense of the industry economic model – which is based on time for surgery for each respective type of procedures. Over the last few months, the Corporation has worked with surgeons involved in our rotator cuff study to perfect and optimize the delivery of ortho-R. Current protocol now adds less than **2 minutes** to standard of care surgery!

**ORTHO-R®: Key points of differentiation**

Unlike other natural biopolymer matrix such as Hyaluronic Acid (HA) or Collagen, the chitosan natural biopolymer molecules are positively charged and therefore are muco-adhesive (sticky) to the negatively charged soft tissues of the human body (tendons, ligaments, meniscus). Characteristics related to the electrostatic binding of the combination product, resulting modification of cell function, slowing of blood clot retraction and extended release of growth factors compared to PRP alone provided justification for classification of the product as a drug. ORTHO-R has a fast coagulation onset, and with its muco-adhesive feature offer the unique benefit of significantly increasing the in-situ residency time of PRP implants from less than 24 hours for PRP alone to up to 6 weeks for ORTHO-R chitosan-PRP drug/biologic combination product, allowing PRP to contribute to the normal healing cascade. ORTHO-R is therefore a perfect matrix system delivering biologics such as PRP, that could be used in various musculoskeletal injury conditions as well as multiple other applications where the delivery of regenerative medicine such as blood, blood products, stem cells, pharmaceuticals or other molecules is desired.

**Management’s Discussion and Analysis for the three and six months ended July 31, 2022**

(In thousands of Canadian dollars, except for units, share and per share amounts)

**Regulatory:**

During FY-21, we received from the US FDA Office of Combination Products, the ORTHO-R product designation as a Drug/Biologics combination product.

**ORTHO-R** has physicochemical interacting actions on various cell types and other PRP components, therefore supporting a Drug/Biologic combination product. The ORTHO-R reconstituted in PRP Drug/biologic implant is delivered through accessory devices. The product’s jurisdictional assignment is to the FDA’s Center for Biologics Evaluation and Research (CBER). There are multiple merits of a Drug/Biologics therapeutic combination product. One of them is the ability to have a multiple mode of action label, related to the various interactions between our proprietary biopolymer and PRP, which may justify the scientific rationale behind the product’s therapeutic effect, and the generation of further intellectual property.

**Clinical:**

The Phase I/II clinical trial status is as follows:

- Our Investigational New Drug (IND) application was granted by the FDA on December 10, 2021.
- 10 US based clinical sites have been selected for the trial, 9 have been initiated and are actively recruiting patients and the last site is expected to commence recruitment during Q4-22(calendar)
- We have initiated surgeries and should complete randomization of Phase I patients prior to the end of October. This would conclude the restrictive recruitment part of the trial (one patient at a time) and allow full simultaneous recruitment by all sites.
- Completion of the Phase II recruitment is expected in H1-23 (Calendar) depending on sites’ enrolment rate.
- Follow up and individual patient assessment and Phase II scoring will take place – 12 months after surgery.

**2. Leverage Polytechnique’s partnership to secure non-dilutive grants to drive proof of concept in multiple indications for Ortho-R**

ChitogenX has received and is seeking non-dilutive research grants through its partnership with Polytechnique

| Indication          | Development Stage | Details   |
|---------------------|-------------------|---|
| <u>Meniscus</u>     | Pre-Clinical      | Testing the efficacy of ORTHO-M/PRP Drug-Biologic Implant formulation, for meniscus repair. Efficacy of our product has already been demonstrated in an animal proof of concept study. Our contracted research veterinarian expert, with the help of a major arthroscopic instrumentation company, have recently completed the development of surgical instruments tools, suitable to the sheep preclinical model. The next steps are to validate our model in large animal pilot and pivotal studies, starting in Q3-23. Human clinical trials would then follow. <b>\$500K grant obtained</b> |
| <u>Tendinopathy</u> | Feasibility       | Feasibility research on a freeze-dried biopolymer formulation combined with autologous biologics, tailored for intra-articular injections to provide the combined visco-biologics supplementation of articular joints and potentially help with tendon healing and regeneration. <b>\$4M grant submitted in Q2-22 with adjudication expected in Q4, 2022 (Calendar).</b>  |

**3. Drive development of our proprietary platform beyond orthopedic applications by seeking R&D and/or development partners for each high potential application**

**Our Proprietary Technology Platform Can Be So Much More**

Considering the significant bioactivity and residency of our proprietary biopolymer – PRP implants, ChitogenX continues to assess its potential for therapeutic uses outside of the rotator cuff/meniscus repair market. The functionality of the chitosan framework could potentially be used in numerous other applications which could potentially address high unmet needs with profound clinical consequences.

Over the recent months, the Corporation initiated scientific discussions with experts in the wound healing, gastrointestinal, neurological, oncological, and cardiovascular markets to identify high unmet medical needs in each category what could potentially be solved by the characteristics of our technologies. Our discussions have yielded formal commitments to participate in these various development programs for which non-dilutive grants funding will be sought.

We will also investigate combining ChitogenX’s patented chitosan framework with targeted delivery of numerous autologous and synthetic therapeutics, either developed internally, licensed, or secured through strategic partnerships with biologic and/or pharma companies.

We will determine the highest value programs through consultation with our scientific and business advisory board and find R&D or development partners for the highest value projects



**4. Investigate the sale of medical grade chitosan to the research-based healthcare industry to generate cashflow for the company in 18-24 months.**

**Global and North America Medical Grade Chitosan Market (US\$ Mn)**

| GLOBAL                   | 2022<br>E | 2023<br>F | 2024<br>F | 2025<br>F | 2026<br>F | 2027<br>F | 2028<br>F | 2029<br>F | 2030<br>F | CAGR<br>(2022 - 2030) |
|--------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------------------|
| Animal Based<br>CHITOSAN | 247.6     | 271.9     | 298.9     | 328.8     | 362.0     | 398.9     | 439.9     | 485.5     | 536.3     | 10.1%                 |

Medical grade chitosan market is expanding fast, with a projected CAGR exceeding 10% for the coming years. ChitogenX medical grade chitosan platform has potential significant advantages vs existing commercial medical grade chitosan formulations, namely, 1) 3-yr shelf life of lyophilized chitosan vs 6 months for the other products currently marketed, 2) GMP grade & Low-cost manufacturing, 3) Composition and methods patents pending in US and Canada, and 4) Easier regulatory pathway potential pathway to revenue in 18 to 24 months.

**ChitogenX Overall Value Proposition**

| Technology Platform   | ORTHO-R: Unique Drug / Biologics / Device Combination Product  | Great Value Creation & Exit Potential  |
|---|--|--|
| <ul style="list-style-type: none"> <li>Proprietary, novel, multi-indications, second generation, de-risked platform</li> <li>Strong intellectual property protection in three patent families</li> <li>Addresses significant unmet medical need in large regenerative medicine market</li> <li>First solution to increase residence time to augment regeneration of new tissue</li> <li>Validated mode of action, safe and easy to use solution</li> <li>Rapid coagulation, avoids shrinkage of implant, potentially adheres to multiple tissues</li> <li>Demonstrated efficacy in large animal model (decreased tendon gap &amp; improved bone structure)</li> </ul> | <ul style="list-style-type: none"> <li>In the US regulatory lead as the first PRP based drug/biologic product in human trials</li> <li>Target U.S. market first with clear regulatory pathway from FDA (IND to BLA)</li> <li>Potentially simpler regulatory pathways in major markets outside the US</li> <li>Advantageous manufacturing costs</li> <li>Uses autologous PRP which can be sourced quickly and easily during surgery</li> <li>Lyophilized chitosan provides long shelf life</li> </ul> | <ul style="list-style-type: none"> <li>Phase I/II clinical trial ongoing</li> <li>Multiple material milestones expected over next quarters including completion of enrollment into phase I/II clinical trial.</li> <li>NASDAQ listing to be considered for 2023 calendar year</li> <li>Multiple regenerative medicine applications</li> <li>Experienced management, Board and Clinical Advisory Board with history of value creation</li> <li>Low market valuation vs. industry peers</li> </ul> |

**Intellectual Property**

ORT is the owner of 3 patent families. Our patent portfolio includes the following:

| Family       | Description   | Patent Status  |
|--------------|---|--|
| <u>No.1</u>  | Clot-activated polymer composition for repairing the tissue of the subject, where the polymer composition adheres to the tissue and promotes cell proliferation, comprising platelet-rich plasma (PRP), a biopolymer, a salt, and a clot activator.                   | <ul style="list-style-type: none"> <li>Issued – Globally</li> <li>Expiry - 2030</li> </ul>                   |
| <u>No.2:</u> | Freeze-dried polymer compositions for mixing with platelet rich plasma to form implants for tissue repair or compositions for therapeutic intra-articular injection.  | <ul style="list-style-type: none"> <li>Issued – Globally</li> <li>Expiry - 2035</li> </ul>                   |
| <u>No.3:</u> | Freeze-dried biopolymer scaffolds that form a hydrated microparticle dispersion after contact with blood or blood-derived fluids and stimulate anabolic wound repair processes, including angiogenesis, cell chemotaxis, tissue remodeling, and extracellular matrix. | <ul style="list-style-type: none"> <li>Issued/Allowance pending – Globally</li> <li>Expiry – 2035</li> </ul> |

**Q2-2023 CORPORATE HIGHLIGHTS (May 1, 2022 to July 31, 2022)**

## Management's Discussion and Analysis for the three and six months ended July 31, 2022

(In thousands of Canadian dollars, except for units, share and per share amounts)

- On May 1, 2022, the Corporation received a method and composition patent from the US Patent Office and received notice issue from Canada and European patent offices for the composition and method patents on one of its key patents for its freeze-dried polymer compositions for mixing with platelet rich plasma to form implants for tissue repair or compositions for therapeutic intra-articular injection.
- On May 4, 2022, the Corporation announced that the United States Patent and Trademark Office (the "USPTO") had issued a patent related to the Company's ORTHO-R soft tissue repair platform. The issued patent, titled, "Freeze-Dried Polymer Compositions for mixing with platelet rich plasma to form implants for tissue repair and/or composition for therapeutic intraarticular injection" (US Patent Application No. U.S. 11,285,100 B2) provides broad protection for both the composition and the method of use of our ORTHO R technology. New patent issued by USPTO to protect core IP until 2035 and positions the Corporation as leading player in the dynamic regenerative medicine market. The patent enables delivery of PRP in soft tissue repair surgery in a proprietary way.
- On May 19, 2022, the Corporation issued 500,000 warrants with an exercise price of \$0.35 per Common Share and expiring July 31, 2023 as compensation to non-related parties providing social media support and other corporate services.
- On May 26, 2022, the Corporation announced that it had received, through its partnership with Polytechnique Montreal, a \$0.5 million non-dilutive grant from Axelys, to advance the development of its technology platform indication for meniscus repair.
- On June 13, 2022, the Corporation announced that patient recruitment for its Phase I/II Clinical trial for testing Ortho-R for rotator cuff repair had been initiated with six of the ten sites actively recruiting patients.
- On July 27, 2022, we announced the initiation of patients' enrollment in its U.S. Phase I/II rotator cuff tear repair clinical trial.

## Events Subsequent to the end of the quarter

- On September 7, 2022, The Corporation announced that it has changed its corporate name to ChitogenX Inc. to better reflect the Company's expanded clinical and commercial opportunities, mission, values, and core competencies.

## SELECTED FINANCIAL DATA

The following table sets forth financial information relating to the periods indicated and should be read in conjunction with the July 31, 2022 unaudited financial statements.

|  | Q2-23          | Q2-22        | Change          |                | YTD-23         | YTD-22         | Change          |                |
|--|----------------|--------------|-----------------|----------------|----------------|----------------|-----------------|----------------|
|  |                |              | \$ <sup>1</sup> | % <sup>2</sup> |                |                | \$ <sup>1</sup> | % <sup>2</sup> |
| <b>Expenses</b>                          |                |              |                 |                |                |                |                 |                |
| R&D                                      | 444            | 141          | 303             | 215%           | 1,107          | 543            | 564             | 104%           |
| G&A                                      | 484            | 367          | 117             | 32%            | 1,051          | 805            | 246             | 31%            |
| Share-based compensation                 | 162            | 64           | 98              | 153%           | 204            | 127            | 77              | 61%            |
| Financial                                | 349            | 332          | 17              | 5%             | 700            | 671            | 29              | 4%             |
| <b>Total Expenses</b>                    | <b>1,439</b>   | <b>904</b>   | <b>535</b>      | <b>59%</b>     | <b>3,062</b>   | <b>2,146</b>   | <b>916</b>      | <b>43%</b>     |
| FVA embedded derivative                  | (78)           | -            | (78)            | -100%          | (812)          | -              | (812)           | -100%          |
| FVA on warrants                          | 2              | -            | 2               | 100%           | (37)           | -              | (37)            | -100%          |
| <b>Net (Loss) and Comprehensive loss</b> | <b>(1,363)</b> | <b>(904)</b> | <b>(459)</b>    | <b>51%</b>     | <b>(2,213)</b> | <b>(2,146)</b> | <b>(67)</b>     | <b>3%</b>      |
| <b>(Loss) per share</b>                  |                |              |                 |                |                |                |                 |                |
| WA # of shares outstanding               | 51,038,776     | 34,885,186   | 16,153,590      | 46%            | 45,423,158     | 34,872,899     | 10,550,259      | 30%            |
| Basic and diluted loss per share         | 0.03           | 0.03         | 0.00            | 3%             | 0.05           | 0.06           | -0.01           | -21%           |

1. A positive variance represents a negative impact to net loss and a negative variance represents a positive impact to net loss

2. Percentage change is presented in relative values

## Management's Discussion and Analysis for the three and six months ended July 31, 2022

(In thousands of Canadian dollars, except for units, share and per share amounts)

**EBITDA(L) Reconciliation** (See "Management's Responsibility for Financial Reporting" – "Non-IFRS Financial Measures")

The following table provides a reconciliation of net loss to EBITDA(Loss) for Q2-23 as compared to Q2-22.

|                         | Q2-23          | Q2-22 | Change          |                | YTD-23         | YTD-22  | Change          |                |
|-------------------------|----------------|-------|-----------------|----------------|----------------|---------|-----------------|----------------|
|                         |                |       | \$ <sup>1</sup> | % <sup>2</sup> |                |         | \$ <sup>1</sup> | % <sup>2</sup> |
| <b>Net loss</b>         | <b>(1,363)</b> | (904) | (459)           | 51%            | <b>(2,213)</b> | (2,146) | (67)            | 3%             |
| Add (deduct)            |                |       |                 | 0              |                |         |                 | 0              |
| Financial Expense       | 349            | 332   | 17              | 5%             | 700            | 671     | 29              | 4%             |
| FVA embedded derivative | (78)           | -     | (78)            | -100%          | (812)          | -       | (812)           | -100%          |
| FVA on warrants         | 2              | -     | 2               | 100%           | (37)           | -       | (37)            | -100%          |
| Depreciation            | 6              | 10    | (4)             | -40%           | 12             | 17      | (5)             | -29%           |
| Amortization            | 8              | 8     | -               | 0%             | 16             | 16      | -               | 0%             |
| <b>EBITDA (L)</b>       | <b>(1,076)</b> | (554) | (522)           | 94%            | <b>(2,334)</b> | (1,442) | (892)           | 62%            |

1. A positive variance represents a negative impact to net loss and a negative variance represents a positive impact to net loss

2. Percentage change is presented in relative values

|                                       | Q2-23 vs Q2-22  |
|---------------------------------------|---|
| <b>Revenues</b>                       | <ul style="list-style-type: none"> <li>CHITOGENX is a clinical stage company. No revenues were generated during each of FY-23 and FY-22.</li> </ul>   |
| <b>R&amp;D expenses</b>               | <ul style="list-style-type: none"> <li>R&amp;D expenses include internal and external expenses. Internal expenses represent mostly salaries and consulting fees for our staff. External expenses include all development costs related to work performed under our Collaborative R&amp;D contract with Polytechnique as well as specific manufacturing activities, regulatory, pre-clinical and clinical work to advance our pipeline. R&amp;D expenses are presented net of R&amp;D tax credits (ITCs) recoverable from the provincial government for Scientific Research and Experimental Development (SR&amp;ED) programs, and net of government grants.</li> <li>R&amp;D expenses are also presented net of grants which are amortized over their respective term.</li> <li>R&amp;D expenses for each of the Q2-23 and YTD-23 periods increased over the prior year periods at \$0.4 million and \$1.1 million compared to \$1.1 million and \$0.5 million respectively, representing increases of 215% and 104%.</li> <li>During FY-23, the Corporation increased its R&amp;D activities after receiving the clearance from the FDA of its IND application in Q4-22 to commence its Phase I/II clinical study for testing Ortho-R for rotator cuff repair. R&amp;D expenses in Q2-23 and YTD-23 include site initiation and training fees, and other auxiliary costs required to get all 10 sites ready for enrollment and screening patients. For the Q2-22 and YTD-22 periods, R&amp;D costs were mainly related to the preparation and filing of the ORTHO-R IND with FDA.</li> </ul> |
| <b>G&amp;A expenses</b>               | <ul style="list-style-type: none"> <li>G&amp;A expenses include salaries and consulting fees paid to non-R&amp;D staff, professional fees, conferences, travel expenses, as well as investors relation activities.</li> <li>G&amp;A spending in Q2-23 increase over Q2-22 at \$0.5 million compared to \$0.4 million representing a 32% variance. G&amp;A expenses for YTD-23 was \$1.1 million compared to \$0.8 million for YTD-22, a 31% increase. The respective increases in Q2-23 and YTD-23 compared to the prior year periods includes some additional salary charges related to the addition of a new CEO, Phil Deschamps, the cost of retaining the prior CEO during a 2-month transition period. The G&amp;A expenses also include a severance to the departing CEO, to be paid until Q1-24.</li> </ul>  |
| <b>Share-based compensation (SBC)</b> | <ul style="list-style-type: none"> <li>Represents the expense related to issuing stock options to staff, consultants and board members. Variances for the comparative quarters include non-recurrent grant to a new Board member as well contractual vesting for members of management on options already outstanding. SBC expenses increased in Q2-23 as a result of new options issued to the new CEO and other senior staff.</li> </ul>  |
| <b>Financial expenses</b>             | <ul style="list-style-type: none"> <li>Financial expenses include interest on loans, non-convertible and convertible debentures, as well as effective interest on debentures as well as foreign exchange gain or loss.</li> <li>Over the last year, the Corporation financed its operations via the issuance of interest-bearing instruments such as CDUs, NCDUs and ITC loans as opposed to equity. While such financial instruments do not lead to an immediate dilution in the total number of shares outstanding in the short term, they lead to increased interest charges.</li> <li>Between October 2020 and April 2022, the Corporation completed CDU financings totalling \$3.2 million. The Corporation also secured a \$3.0 million non-convertible debenture in November 2020 as well as a \$1.1 million bridge financing in Q4-22, part of which (\$0.2 million) was converted into the \$3.2 million Private Placement financing ("April 2022 PIPE"). All these transactions have impacted financial expenses.</li> </ul>  |



## Management's Discussion and Analysis for the three and six months ended July 31, 2022

(In thousands of Canadian dollars, except for units, share and per share amounts)

|  |  |
|--|--|
|  | <ul style="list-style-type: none"> <li>Financial expenses for Q2-23 and YTD-23 were stable compared to Q2-22, and YTD-22 at \$0.3 million and \$0.7 million respectively.</li> </ul>   |
| <b>Fair Value Adjustment ("FVA") of Embedded Derivative</b>        | <ul style="list-style-type: none"> <li>On July 19, 2022, the Corporation announced the amendment of three series of CDUs to extend their respective maturity dates.</li> <li>An Embedded derivative comprised of the conversion options classified as liability was created following the amendment of the CDUs. Starting Q4-22, any change in the Fair Value of the Conversion Option of the CDUs ("FVCO") has to be recorded as a financial expense.</li> <li>During Q2-23 and YTD-23, the change in the FVCO, led to an Adjustment of the Fair Value ("FVA") of the conversion option representing gains of \$0.1 million and \$0.8 million respectively. There was no FVCO adjustments required for Q2-22 and YTD-22 as the embedded derivative was created in Q3-22.</li> </ul>   |
| <b>Fair Value Adjustment ("Fair Value Adjustment") on warrants</b> | <ul style="list-style-type: none"> <li>The terms of the warrants issued as part of the December 2022 Bridge financing led to the creation of a warrant liability. Until the warrants are exercised or expire, a fair value adjustment to the warrants will be recorded quarterly to reflect the change in the warrant liability.</li> <li>During Q2-23 and YTD-23, the revaluation of the Warrants' fair value as compared to the YE-22 value was nominal.</li> </ul>  |
| <b>Net Loss for the period.</b>                                    | <ul style="list-style-type: none"> <li>Net loss increased by 51% between Q2-22 and Q2-23 at \$1.4 million compared to \$0.9 million. The \$0.5 million increase in net loss was primarily due to the increase in R&amp;D and G&amp;A spendings described above.</li> <li>YTD-23 net loss was stable as compared to YTD-22 and \$2.2 million as compared to \$2.1 million, a 3% increase.</li> </ul>  |
| <b>EBITDA (L)</b>  | <ul style="list-style-type: none"> <li>Management believes that our EBITDA (L) performance is more indicative of our operating results as it eliminates the financial costs associated with our financial structure such as CDUs and NCCA financings, and ITC financings as well as depreciation and the amortization of intangible assets.</li> <li>After eliminating the impact of the financial expenses, as well as depreciation and amortization, but also after eliminating the impact of the combined gain on revaluation of the CDU embedded derivative and warrant liability, our EBITDA loss during Q2-23 was \$1.1 million compared to \$0.6 million for Q2-22, representing a 94% increase.</li> <li>EBITDA loss during YTD-23 was \$2.3 million compared to \$1.4 million for YTD-22, representing a 62% increase.</li> </ul> |

## SELECTED BALANCE SHEET HIGHLIGHTS

The following table sets forth the financial information related to the Corporation's statements of financial position for the periods indicated and should be read in conjunction with the unaudited financial statements for quarter ended July 31, 2022.

| As at,   | July 31, 2022 | 31-Jan-21 | Change          |                |
|--|---------------|-----------|-----------------|----------------|
|  |               |           | \$ <sup>1</sup> | % <sup>2</sup> |
| Cash   | 879           | 313       | 566             | 181%           |
| Total assets                                   | 1,684         | 1,123     | 561             | 50%            |
| Trade accounts payable and accrued liabilities | 776           | 607       | 169             | 28%            |
| Convertible notes                              | 803           | 934       | -131            | -14%           |
| Convertible Debentures - Short term            | 2,525         | -         | 2,525           | 100%           |
| Convertible Debentures - Long term             | -             | 2,387     | -2,387          | -100%          |
| Non-Convertible Debentures                     | 2,498         | 2,349     | 149             | 6%             |
| Warrants classified as liability               | 103           | 139       | -36             | -26%           |
| Embedded derivative - Short term               | 770           | -         | 770             | 100%           |
| Embedded derivative - Long term                | -             | 1,582     | -1,582          | -100%          |
| Total liabilities                              | 7,688         | 8,227     | -539            | -7%            |
| Common shares                                  | 10,455        | 7,891     | 2,564           | 32%            |
| Warrants                                       | 2,317         | 1,828     | 489             | 27%            |
| Contributed surplus                            | 2,364         | 2,104     | 260             | 12%            |
| Deficit  | (21,140)      | (18,927)  | -2,213          | 12%            |

- A positive variance represents a positive impact to our balance sheet and a negative variance represents a negative impact to our balance sheet.
- Percentage change is presented in relative values

## Management's Discussion and Analysis for the three and six months ended July 31, 2022

(In thousands of Canadian dollars, except for units, share and per share amounts)

| Selected items                              | Q2-23 vs YE-22   |
|---|--|
| <b>Cash</b>                                 | <ul style="list-style-type: none"> <li>Cash at the end of Q2-23 was \$0.9 million compared to \$0.3 million at the start of the fiscal year. The increase in cash takes into consideration the net impact of the April 2022 PIPE which generated net proceeds of \$2.7 million less liquidities required to fund operations during the first 6 months of FY-23.</li> </ul>   |
| <b>Total Assets</b>                         | <ul style="list-style-type: none"> <li>The increase in cash during YTD-23 period led to a 50% increase in our total assets between the end of FY-22 and Q2-23.</li> </ul>  |
| <b>Trade AP and accrued liabilities</b>     | <ul style="list-style-type: none"> <li>Trade accounts payables and accrued liabilities increased by \$0.2 million or 28% during the first 6 months of FY-23 following the increase in R&amp;D activities that took place during the recent quarters.</li> </ul>  |
| <b>Convertible Notes</b>                    | <ul style="list-style-type: none"> <li>Convertible notes were issued as part of the December bridge financing which matures in December 2022. The reduction since the start of the fiscal year takes into consideration the \$0.2 million of notes converted into the April 2022 PIPE, as well as accretion expense for the period.</li> </ul>   |
| <b>Convertible debentures units ("CDU")</b> | <ul style="list-style-type: none"> <li>During FY-20 and FY-21, the Corporation issued \$3.2 million of CDUs to fund its operations. Considering the CDUs mature on May 1, 2023, the Convertible Debentures are now presented as short-term liability.</li> <li>The nominal increase between the end of FY-22 and Q2-23 represents accretion expense of \$0.1 million.</li> </ul>   |
| <b>Non-convertible Debentures ("NCDU")</b>  | <ul style="list-style-type: none"> <li>During Q4-21 the Corporation secured a \$3 million NCDU financing to fund its activities. The increase of \$0.1 million between YE-22 and Q2-23 represents accretion expense for the Q2-23 period.</li> </ul>   |
| <b>Warrants classified as liability</b>     | <ul style="list-style-type: none"> <li>This item represents the \$0.1 million Fair Value of the warrants issued as part of the December 2022 bridge financing less the gain on reevaluation of the warrants between the date of issuance and Q2-23. (See "Financial Statements - note 11b").</li> </ul>  |
| <b>Embedded Derivative</b>                  | <ul style="list-style-type: none"> <li>In July 2022, a \$1.2 million embedded derivative representing the related conversion options was created following the amendment of the CDUs. Any change in the Fair Value of the Conversion Option of the CDUs ("FVCO") is recorded as a financial expense in the statements of loss, as a gain or loss on embedded derivative related to CDUs.</li> <li>Changes to the FVCO takes place based on 1) reduction of the FVCO following quarterly re-evaluation of the FVCO; 2) exercise of the conversion option by the holder; or 3) repayment/maturity.</li> <li>The FV of the conversion option of the CDUs was \$1.6 million at YE-22 and presented as long-term. Considering the May 1, 2023 maturity of the CDU, the Embedded derivative is now presented as short-term liability and has been reduced by 51% to \$0.8 million since YE-22 due to a gain on the Fair Value Adjustment.</li> </ul> |
| <b>Total Liabilities</b>                    | <ul style="list-style-type: none"> <li>Total liabilities have decreased by \$0.5 million between YE-22 and Q2-23. The variation resulted mainly from the \$0.8 million gain on revaluation of the warrant liability and CDU embedded derivative offset by a \$0.2 million increase in payables.</li> </ul>   |
| <b>Common Shares</b>                        | <ul style="list-style-type: none"> <li>Common shares have increase by \$2.6 million mainly as a result of the April 2022 PIPE net of share issue costs.</li> </ul>   |
| <b>Warrants</b>                             | <ul style="list-style-type: none"> <li>Warrants increased by \$0.5 million mainly as a result of the warrants issued as part of the April 2022 PIPE net of the allocation of share issue costs, less the impact of expired warrants.</li> </ul>  |
| <b>Contributed Surplus</b>                  | <ul style="list-style-type: none"> <li>The contributed surplus increased by \$0.3 million as a result of share-based compensation expense and the expiry of warrants.</li> </ul>   |
| <b>Deficit</b>                              | <ul style="list-style-type: none"> <li>Increase reflects the performance of the Corporation during Q2-23. (See "Statement of Loss" commentaries)</li> </ul>  |

## SELECTED QUARTERLY FINANCIAL INFORMATION

The following table sets out the Corporation's selected unaudited quarterly financial information for the eight quarters ended July 31, 2022. This information is derived from unaudited quarterly financial statements prepared by management in accordance with IFRS. The following quarterly information is presented on the same basis as the audited financial statements and should be read in conjunction with those statements and their accompanying notes.

|  | Q2-23          | Q1-23          | Q4-22         | Q3-22          | Q2-22         | Q1-22          | Q4-21          | Q3-21         |
|--|----------------|----------------|---------------|----------------|---------------|----------------|----------------|---------------|
| R&D Expenses (Net)                         | 444            | 663            | 415           | 591            | 141           | 402            | 390            | 191           |
| G&A expenses                               | 484            | 567            | 309           | 357            | 367           | 438            | 472            | 342           |
| Share-based compensation                   | 162            | 42             | 67            | 43             | 64            | 63             | 112            | 101           |
| Financial expenses (income)                | 349            | 351            | 370           | 266            | 332           | 339            | 294            | 179           |
| FVA embedded derivative                    | (78)           | (734)          | (279)         | 667            | -             | -              | -              | -             |
| FVA on warrants                            | 2              | (39)           | (31)          | -              | -             | -              | -              | -             |
| <b>Net Loss</b>                            | <b>(1,363)</b> | <b>(850)</b>   | <b>(851)</b>  | <b>(1,924)</b> | <b>(904)</b>  | <b>(1,242)</b> | <b>(1,268)</b> | <b>(813)</b>  |
| <b>Loss per share (Basic and diluted):</b> | <b>0.02</b>    | <b>0.02</b>    | <b>(0.02)</b> | <b>(0.06)</b>  | <b>(0.03)</b> | <b>(0.04)</b>  | <b>(0.04)</b>  | <b>(0.03)</b> |
| <b>EBITDA (Loss)</b>                       | <b>(1,076)</b> | <b>(1,254)</b> | <b>(773)</b>  | <b>(973)</b>   | <b>(554)</b>  | <b>(888)</b>   | <b>(955)</b>   | <b>(611)</b>  |

## Management's Discussion and Analysis for the three and six months ended July 31, 2022

(In thousands of Canadian dollars, except for units, share and per share amounts)

(See "Management's Responsibility for Financial Reporting" – "Non-IFRS Financial Measures")

| Notes  | Valuable information   |
|--|--|
| <b>R&amp;D expenses (Net of ITCs and grants)</b> | <ul style="list-style-type: none"> <li>Net R&amp;D expenses fluctuates based on the timing of R&amp;D activities. R&amp;D activities have accelerated over the last year as the Corporation was getting ready to start and initiated its Phase I/II trial for testing Ortho-R for rotator cuff repair.</li> </ul>  |
| <b>G&amp;A expenses</b>                          | <ul style="list-style-type: none"> <li>G&amp;A expenses have been stable over the last 2 years. G&amp;A expenses in Q1-23 included the impact of senior management changes that took place during the quarter. We expect G&amp;A to be stable for the coming quarters.</li> </ul>  |
| <b>Share-Based Compensation</b>                  | <ul style="list-style-type: none"> <li>Share-based compensation fluctuates as a results of staff changes, and due to the timing of expense recognition associated with the vesting of the options issued. Q2-23 SBC included the impact of issuing options and RSUs to the new CEO and new chief Medical Officer.</li> </ul>   |
| <b>Financial expenses</b>                        | <ul style="list-style-type: none"> <li>Financial expenses have been relatively stable over the last few quarters after having increased in Q4-21 following the implementation of the \$3.0 million NCDU.</li> <li>Interest charges on the CDUs may go down over time as CDU holders opt to convert their debenture prior to maturity.</li> </ul>   |
| <b>FVA of embedded derivative</b>                | <ul style="list-style-type: none"> <li>The changes to the terms of the CDU conversion price as well as the variation in share price during the last quarters has led to quarterly adjustments to the FVCO of the CDUs representing respective decreases (gains) or increases (losses) since the embedded derivative was created in Q2-22.</li> </ul>   |
| <b>FVA on warrants</b>                           | <ul style="list-style-type: none"> <li>There has been nominal quarterly variations (adjustments) to the fair value of the warrants issued as part of the December 2021 bridge financing</li> </ul>   |
| <b>Net loss</b>                                  | <ul style="list-style-type: none"> <li>Over the last few quarters, net loss reflect has been mainly impacted by the FVA of the derivative liability related to the CDUs as well as to a lesser extent to the fluctuations of the R&amp;D, G&amp;A and SBC expenses.</li> <li>Net loss in Q2-23 was up compared to Q1-23 as FVA on the embedded derivative decreased by \$0.6 million. Net loss in Q3-22 increased mainly as a result of the creation of the CDU embedded derivative.</li> <li>Going forward ChotogenX' net loss will be mainly driven by the level of R&amp;D spending made to advance its R&amp;D programs (Ortho-R, Ortho-M, and Ortho-C) as well as the financial expenses related to its capital structure include FVA of each of the embedded derivative and warrants.</li> </ul> |
| <b>EBITDA (Loss)</b>                             | <ul style="list-style-type: none"> <li>EBITDA (Loss) (See "Management's Responsibility for Financial Reporting" – "Non-IFRS Financial Measures") eliminates the impact of the FVA on the CDU, NCDU, ITC and other financings which reflect the Corporation's financing strategy adopted to attract the required capital to fund its operations.</li> <li>After eliminating such expenses, the EBITDA (Loss) in Q2-23 decreased over Q1-23 as R&amp;D activities were down \$0.2 million. Fluctuations over prior quarter were directly related to variations in R&amp;D and G&amp;A spendings described above.</li> </ul>  |

## LIQUIDITIES AND CAPITAL RESSOURCES

| For the 3-month period ended on,      | 31-Jul-22  | 31-Jul-21    | Change          |                |
|---------------------------------------|------------|--------------|-----------------|----------------|
|                                       |            |              | \$ <sup>1</sup> | % <sup>2</sup> |
| <b>Operating activities:</b>          |            |              |                 |                |
| Net loss from operations              | (2,213)    | (2,146)      | (67)            | 3%             |
| Other items not affecting cash        | 67         | 581          | (514)           | -88%           |
| Changes in non-cash working capital   | 140        | (25)         | 165             | -660%          |
| Cash used in operations               | (2,006)    | (1,590)      | (416)           | 26%            |
| <b>Investing activities:</b>          |            |              |                 |                |
| Cash used in investing activities     | -          | (33)         | 33              | 100%           |
| <b>Financing activities:</b>          |            |              |                 |                |
| Cash provided by financing activities | 2,570      | 135          | 2,435           | 1804%          |
| <b>Cash, beginning of period</b>      | <b>313</b> | <b>2,379</b> | <b>(2,066)</b>  | <b>-87%</b>    |
| (Decrease) increase in cash           | 564        | (1,488)      | 2,052           | -138%          |
| Effect of foreign exchange on cash    | 2          | (36)         | 38              | -106%          |
| <b>Cash, end of period</b>            | <b>879</b> | <b>855</b>   | <b>24</b>       | <b>3%</b>      |

1. A positive variance represents a positive impact to cash flows and a negative variance represents a negative impact to cash flows

2. Percentage change is presented in relative values

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(In thousands of Canadian dollars, except for units, share and per share amounts)

|  | Q2-23 vs Q2-22  |
|--|---|
| <b>Cash used in operations</b>               | <ul style="list-style-type: none"> <li>Cash used in operations represents the cash flows from operations, excluding income and expenses not affecting cash plus changes in non-cash working capital items.</li> <li>Cash used in operations was \$2.0 million for YTD-23 as compared to \$1.6 million for YTD-22 period, representing a \$0.4 million decrease. The increase results from the \$0.5 million decrease in items not affecting cash which captured the combined \$0.8 million gains on fair value adjustments to the CDU embedded derivative and warrant liability. Cash used in operations in YTD-23 was also impacted by a \$0.2 million positive change in non-cash working capital items including a favorable change of \$0.2 million in payables.</li> </ul> |
| <b>Cash used in investing activities</b>     | <ul style="list-style-type: none"> <li>No investments during YTD-23, compared to nominal investment in YTD-22.</li> </ul>   |
| <b>Cash provided by financing activities</b> | <ul style="list-style-type: none"> <li>Financing activities generated \$2.6 million during the YTD-23 period representing the net impact of the April 2022 PIPE compared to \$0.1 million in YTD-22 which included nominal proceeds from the exercise of warrants as well as a \$0.1 million government grant to support R&amp;D work.</li> </ul>   |
| <b>Cash, End of the period</b>               | <ul style="list-style-type: none"> <li>The Corporation ended Q2-23 with \$0.9 million of cash compared to \$0.9 million at the end of Q2-22 representing a nominal 3% increase. Cash increased by \$0.6 million during YTD-23 as a result of the April 2-22 PIPE compared to a \$1.5 million decrease in YTD-22 as the Corporation mainly used its liquidities to fund its operations.</li> </ul>   |

## Cash, and Working Capital

| As at,                                    |            |            | Change          |                |
|---|------------|------------|-----------------|----------------|
|   | 2022-07-31 | 2022-01-31 | \$ <sup>1</sup> | % <sup>2</sup> |
| Cash                                      | 879        | 313        | 566             | 181%           |
| Total current assets                      | 1,313      | 722        | 591             | 82%            |
| Accounts payables and accrued liabilities | 776        | 607        | 169             | 28%            |
| Convertible unit Bridge                   | 803        | 934        | (131)           | 100%           |
| Convertible debentures - Short term       | 2,525      | -          | 2,525           | 100%           |
| Embedded derivative                       | 770        | -          | 770             | 100%           |
| Warrants presented as a liability         | 103        | 139        | (36)            | 100%           |
| Total current liabilities                 | 5,150      | 1,869      | 3,281           | 176%           |
| Working Capital                           | (3,837)    | (1,147)    | (2,690)         | 235%           |

1. A positive variance represents a positive impact, and a negative variance represents a negative impact

2. Percentage change is presented in relative values

Cash at the end of Q2-23 was \$0.9 million as compared to \$0.3 million at the end of YE-22 representing a \$0.6 million increase. During Q2-23, working capital was impacted by the reclass of the convertible debentures now presented as short-term liability. Working Capital at the end of Q2-23 was showing a \$3.8 million deficit compared to a \$1.1 million deficit as at the end of Q2-22. Included in the working capital deficit is 1) the non-cash \$0.8 million the embedded derivative (FVCO of the CDUs) which will be eliminated at the latest on May 1, 2023, as well as 2) the \$2.5 million CDUs which can be converted up to May 1, 2023.

With Phase I/II activities picking up and related corporate milestones soon to be met over the coming quarters, the Corporation is highly confident that most of the CDU will be converted at or prior to maturity, thus eliminating a total of \$3.3 million worth of short-term liabilities (\$2.5 million CDU, and \$0.8 million embedded derivative).

The Corporation will continue to use its liquidities to fund its operations including its primary objective of advancing its first Phase I/II human trial on Ortho-R for rotator cuff repair and is also currently assessing various scenarios for adding to its liquidities and addressing the maturity of the remaining \$0.8 million convertible notes due in Q4-23.

During prior periods, the Corporation has demonstrated its ability to raise the necessary capital to support its operations and achieve development milestones. However, there is no assurance that the Corporation will be able to secure the necessary financing to fund its various development programs. Management has continued to implement IR and financing initiatives to attract the required capital to fund its operations and deliver R&D and corporate milestones over the next fiscal year. (See "Overview of the Business" and "Going concern").

## Future financing

As of July 31, 2022, ChitogenX had 34.3 million warrants outstanding with an average exercise price of \$0.42. 32.7 million warrants are subject to an acceleration clause. 16 million warrants issued as part of the April 2022 PIPE can be accelerated if the average VWAP of the Corporation's shares over any ten (10) consecutive trading days (the "Trading Period") is greater or equal to \$0.50 (the "Accelerator price"),

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*(In thousands of Canadian dollars, except for units, share and per share amounts)*

the Corporation may give notice to the warrant holder that it must exercise its remaining warrants within a period of 30 days from the date of receipt of the notice, failing which the warrants will automatically expire. Same applies for 16.7 million warrants with an accelerator price of \$1.00 but will require a 20-day trading period.

The extent to which these warrants are exercised will be a function of the market price of the Corporation's underlying common shares and investors' view of the opportunity for shareholder value creation over the investment time for each individual investor. If the acceleration clause had been exercised for all warrants outstanding at the end of Q2-23 and for which the acceleration clause applied, the maximum influx of cash to the Corporation would have been approximately \$13.9 million. Assuming all warrants are exercised prior to their maturity a total of \$14.2 million could be raised.

The Corporation's use of available funds over the coming year is of utmost concern to the Board. Since the extent and timing of warrant exercise as a source of financing are uncertain, management continues to look for alternative sources of financing to secure the required capital necessary to fund its operations and development projects. Management's focus is on securing equity-based financings from Canadian and US based institutional and/or accredited investors. The Corporation is also actively promoting its technologies to strategic partners.

**Discussion of operating cash requirements**

All programs in the Corporation's current portfolio will require a significant investment to increase their market value (through, for example, clinical trials) or to attract a strategic partner. We estimate that \$30 million will be required to bring our rotator cuff (Ortho-R), meniscus (Ortho-M), and cartilage (Ortho-C) programs to market. There are several areas where duplication between programs can provide savings such as the manufacture of the chitosan material, which is common across our product platform. We therefore do not need to replicate several manufacturing activities, or some associated costs, for each of the projects.

Ortho-R for the repair of rotator cuff tears is a clinical development stage program and represents our lead product for commercialization. We currently estimate that an additional investment of at least \$3 million will be required to provide proof of concept in human and another \$10 million to bring the same program to commercialization.

Ortho-M (meniscus) is the Corporation's second candidate and is also in a development phase. Proof of efficacy in a large animal preclinical model is currently taking place 80% of which is funded by 3<sup>rd</sup> party grants. Ortho-M's development pathway and plan will be similar to Ortho-R and will benefit from all cGMP activities performed on scaling-up Ortho-R. Consequently, management estimates that \$1.5 million will be required prior to submitting an IND application prior to testing Ortho-M in human for meniscus tear repair.

Ortho-C and Ortho-V are currently at earlier stage of development and management does not intend to commit any sums to the advancement of these projects until its successfully advances Ortho-R and Ortho-M in human clinical testing.

In order to successfully advance its current R&D programs, ChitogenX entered on into a Collaborative R&D Agreement with Polytechnique on to ensure access to Polytechnique's staff, expertise and laboratories. The agreement expires on August 14, 2024.

**Statement of Compliance**

The unaudited interim financial statements included in this MD&A for the quarter ending July 31, 2022 have been prepared in accordance with *International Financial Reporting Standards* as issued by the *International Accounting Standards Board ("IASB")* as well as with those standards and interpretations as issued by the *International Financial Reporting Interpretations Committee ("IFRIC")* issued and effective or issued and early adopted as at the time of preparing these interim financial statements.

**Use of Estimates and Judgements**

Reference should be made to the Corporation's 2022 annual financial statements, *note 3*, for an extended description of the information concerning the Corporation's significant judgments, estimates and assumptions that have the most significant effect on the recognition and measurement of assets, liabilities, income and expenses.