

# MARVEL BIOSCIENCES CORP.

## MANAGEMENT'S DISCUSSION AND ANALYSIS

The following Management's Discussion and Analysis ("MD&A") is dated December 19, 2022 and should be read in conjunction with the unaudited condensed interim consolidated financial statements for the period ended October 31, 2022 and 2021, along with the audited consolidated financial statements of Marvel Biosciences Corp. ("Marvel" or the "Company") for the year ended July 31, 2022 and the comparative year ended July 31, 2021. Marvel prepares its unaudited condensed interim consolidated financial statements in accordance with International Financial Reporting Standards ("IFRS"), as set out in Part 1 of the Handbook of the Canadian Institute of Chartered Professional Accountants.

### FORWARD-LOOKING INFORMATION

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The Company's condensed interim consolidated financial statements for the three ended October 31, 2022, and this accompanying MD&A contain statements that constitute "forward-looking statements" within the meaning of National Instrument 51-102. Continuous Disclosure Obligations of the Canadian Securities Administrators.

It is important to note that, unless otherwise indicated, forward-looking statements in this MD&A describe the Company's expectations as of December 19, 2022.

Certain statements in this MD&A that are not based on historical facts constitute forward-looking information. Forward-looking information is not a promise or guarantee of future performance but is only a prediction that relates to future events, conditions or circumstances or the Company's future results, performance, achievements or developments and is subject to substantial known and unknown risks, assumptions, uncertainties and other factors that could cause the Company's actual results, performance, achievements or developments in its business or industry to differ materially from those expressed, anticipated or implied by such forward-looking information. Forward-looking statements include statements regarding the outlook for the Company's future operations, plans and timing for the introduction or enhancement of its services and products, statements concerning strategies or developments, statements about future market conditions, supply conditions, end customer demand conditions, channel inventory and sell through, revenue, gross margin, operating expenses, profits, forecasts of future costs and expenditures, and other expectations, intentions and plans that are not historical fact. The forward-looking statements in this MD&A are based on certain factors and assumptions regarding expected growth, results of operations, performance and business prospects and opportunities. Specifically, management has assumed that the Company's performance will meet management's internal projections. While management considers these assumptions to be reasonable based on information currently available to it, they may prove to be incorrect.

Readers are cautioned not to place undue reliance upon any such forward-looking statements, which speak only as of the date they are made. Readers are also advised to consider such forward-looking statements in light of the risk factors and uncertainties that may affect the Company's actual results, performance, achievements or developments.

The Company disclaims any intention or obligation to update or revise any forward-looking statements whether as a result of new information, future events or otherwise, except to the extent required by applicable law. Further information concerning risks and uncertainties associated with these forward-looking statements and the Company's business may be found in the Company's other filings.

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### **COMPANY OVERVIEW**

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Marvel Biosciences Corp. ("Marvel" or the "Company") (formerly "Alphanco Ventures Corp.") is a biotechnology company that was incorporated on August 1, 2018, under the laws of the Province of British Columbia. The Company continued from British Columbia to Alberta on June 14, 2021. The Company's head office is 420, 505 8<sup>th</sup> Ave SW, Calgary, Alberta T2P 1G2 and the registered and records office is 600, 815 8<sup>th</sup> Avenue SW, Calgary Alberta T2P 3T2.

Alphanco Venture Corp. ("AVC") was a capital pool company listed on the TSX Venture Exchange (the "TSXV") that received conditional approval from the TSXV for its acquisition of all of the outstanding shares of Marvel Biotechnology Inc. as its proposed "Qualifying Transaction" as defined under TSXV policies. The Transaction was pursuant to a reverse take-over ("RTO") by AVC which acquired all of the issued and outstanding shares of Marvel Biotechnology Inc. by amalgamation agreement in exchange for common shares in the capital of AVC. On December 4, 2020, the AVC, Marvel Biotechnology Inc. and 2306696 Alberta Ltd., a wholly-owned Alberta subsidiary of AVC, entered into the Amalgamation Agreement. Other than the issuance of the Common Shares, there was no other consideration payable by Alphanco to acquire Marvel Biotechnology Inc. As a result of the Transaction, Marvel Biotechnology Inc. became a wholly-owned subsidiary of Marvel Bioscience Corp. (formerly Alphanco Venture Corp.).

In connection with closing of the Qualifying Transaction which occurred June 14, 2021, AVC changed its name to Marvel Bioscience Corp. and commenced trading on the TSXV under the symbol "MRVL" approximately July 12, 2021. The Company is classified as a Tier 2 issuer pursuant to TSXV policies and a reporting issuer in each of the Provinces of British Columbia, Alberta, and Ontario.

The Company is currently a pre-clinical stage pharmaceutical development biotechnology company that utilizes a "drug redevelopment" approach to drug development. Historically, when a new class of drug is developed, it is optimized for a particular target, but typically only approved for a specific disease. Often, a new disease is identified which involves the same target, however, pending the remaining patent life, the originally approved drug may not have sufficient time left for it to be commercially viable to be developed for the new disease indication. Marvel develops new synthetic chemical derivatives of the original approved drug for the new disease indication. Patent protection is sought as the new potential asset is developed by the Company. The Company believes the business model results in significantly less risk, cost and time to develop its assets compared to traditional biotechnology companies.

The Company has currently developed several new chemical entities, using synthetic chemical derivatives of known, off-patent drugs, that inhibit the A2a adenosine receptor with application to neurological diseases (depression & anxiety, Alzheimer's, ADHD), and the non-neurological conditions of cancer and non-alcoholic steatohepatitis. Marvel is also exploring additional undisclosed targets to expand its asset pipeline.

### **The Company's Assets, Science and Developments**

#### **New Derivatives of KW-6002 Resulting in Marvel's Lead Molecule MB-204:**

##### ***Background on Istradefylline:***

Currently, Istradefylline (aka KW-6002, Nourianz) is the only approved selective adenosine A2A receptor antagonist. The drug was developed by Kyowa Kirin and first approved in Japan in 2013 and by the FDA in 2019. Approval was based on its success in 4 clinical studies which lasted 12 weeks and included more than 1100 participants in which statistically significant decreases from baseline in daily off time compared to placebo were observed. The most common adverse reactions observed in patients taking Nourianz were involuntary muscle movement (dyskinesia), dizziness, constipation, nausea, hallucination and sleeplessness (insomnia). Istradefylline has a favourable pharmacokinetic ("PK") profile and is currently dosed orally, once daily. This is an important consideration for patient compliance.

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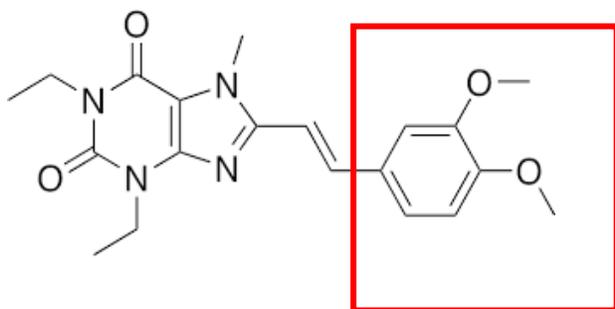
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### **Development of MB-204 (aka Target 1b):**

Although there are many different pharmacophores (a part of a molecular structure that is responsible for a particular biological or pharmacological interaction that it undergoes) possessing A2A receptor antagonist activity, head- to-head studies of six prototypic structures found Istradefylline exhibited the best characteristics for a central nervous system ("CNS") targeted drug. By virtue of being approved, the drug also has a known toxicity profile, however the entire class is believed to be relatively safe.

The Company has designed synthetically accessible derivatives of KW-6002. The derivatives or new chemical entities developed by significantly enhance certain compounds that results in a new novel and patentable assets for a new disease indication. A patentability and freedom to operate opinion has been obtained from a top Canadian patent firm specializing on pharmaceutical new chemical entities.

A composition of matter patent was filed in Q1 of 2020 on a number of new chemical compounds developed including the Company's lead target 1b referred to as MB 204.



The modifications leading to the identification of lead molecule Target 1b (MB-204) were inspired by previous research involving fluorination of the methoxy ether groups on the cinnamic acid moiety of the Japanese anti-allergy drug Tranilast. This was part of an effort to generate compounds for kidney disease with improved PK profile. Fluorination yielded bis mono/di-fluoromethoxy ether compounds with significantly longer half lives than Tranilast itself and with no emergent new toxicity issues.

*Synthesis* of lead MB-204 (Target 1b) has been successfully synthesized at gram scale using a comparatively simple five step synthetic pathway with an overall yield of 26%.

The Company has conducted successful *In vitro*, *screening for binding activity, and pharmacokinetics ("PK")* studies for MB-204 *and* Istradefylline. and have determined have similar or better results at this stage of development compared to Istradefylline. PK refers to the movement of drugs through the body and the body's biological response to drugs. PK describes a drug's exposure by characterizing absorption, distribution, bioavailability, metabolism, and excretion as a function of time.

The Company has further delineated the activity of Target 1b in additional non-Alzheimer Disease ("AD") related models with tests such as the open-field test (locomotor activity) and elevated plus maze (anxiety) and maximum tolerated dose studies focused on behavioural changes and rotorod co-ordination. A study on *in vivo* pharmacodynamics was also undertaken with receptor occupancy studies. These experiments were completed in Q3 2021. The compounds are also being tested both *in vitro* and *in vivo* for its effect on non-alcoholic steatohepatitis ("NASH") or fatty liver disease.

In past experiments the Company has found its lead asset, MB-204 was active in two different pre-clinical models of NASH using fibrosis and the non-alcoholic fatty liver disease activity score (NAS score) endpoints

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that are analogous to the known approvable NASH endpoints with the FDA. These early indications highlight a promising trajectory for MB-204 as a prospective treatment for NASH disease.

NASH is a global disease that affects a significant portion of the population with a global market representing over \$20B USD. The major concern for physicians and their patients is the development of liver fibrosis which can result in cirrhosis and liver cancer. Currently, there are no approved treatments for NASH, and very few treatments in development are focused on reduction in fibrosis. The most advanced active candidate specifically targeting fibrosis is Cenicriviroc which is currently in Phase 3 clinical trials.

The Company studied its lead adenosine A2a receptor antagonist MB-204 in two pre-clinical NASH models and concluded the following:

- In the first model, focusing on the NAS Score, 6-week old STAM® mice (SMC, Japan) were treated with MB-204 (10 mg/kg), once daily per oral for 3 weeks. A 1.4 point drop in the NAS score ( $p < 0.01$ ) was observed, with a particularly strong effect seen on hepatocyte ballooning ( $p < 0.0001$ ) compared to vehicle.
- In the second model, focusing on fibrosis, 30-week old pre-aged NASH mice (Taconic) were treated once daily per oral for approximately 3 weeks with MB-204 (10mg/kg) or Cenicriviroc (30 mg/kg), the leading anti-fibrotic treatment for NASH in Phase 3 clinical trials. A 47% reduction in fibrosis was observed comparing control and MB-204, and MB-204 was significantly better ( $p < 0.05$ ) compared to Cenicriviroc in this experiment.

The Company's milestones for its lead compound asset MB-204 include:

- Initiation of IND-enabling toxicology studies in Q4 2021, now initiated;
- Completion of 2 kg of cGMP API in Q4 2022;
- Completion of Good Laboratory Practice ("GLP") toxicology expected Q1 2023; and
- Initiation of Phase 1 with potential efficacy endpoints in Q1 2023.

### ***Future Pipeline Products***

In order to reduce risk and diversify its asset pipeline, the Company has identified several tryptamine inspired compounds that it believes can help promote neuroplasticity but with reduced hallucinatory potential which is a potential liability of tryptamine molecules. These compounds have demonstrated promising anti-depressive activity in animal models. The company no longer intends to pursue other targets previously considered for sleep and protein misfolding.

### ***Business Strategy***

Marvel's business strategy is to develop and market new chemical entities (lead MB-204) in an effective and timely manner. Marvel intends to achieve its business strategy by focusing on three key areas:

- Develop the therapeutic and has initiated toxicology and manufacturing programs and bring the product into a clinical setting to assess its safety and efficacy in human subjects.
- Establish and has commenced collaborations with experts to assist Marvel with scientific and clinical developments of a new pharmaceutical product.
- Implement strategic alliances with selected pharmaceutical and biotechnology companies where such alliances may complement and expand Marvel's research and development efforts on the product and provide sales and marketing capabilities.

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Marvel's business strategy is based on attaining a number of commercial objectives which in turn are supported by a number of product development goals. The development of new products presently being conducted by Marvel is primarily of a research and development nature. In the context of this document, statements of Marvel's "belief" are based upon Marvel's results derived to date from its research and development program and upon which Marvel believes that it has a reasonable scientific basis to expect the particular results to occur. There are no assurances that the particular result expected by Marvel will occur.

At this time Marvel does not intend to become a fully integrated pharmaceutical company with substantial in-house research and development, marketing or manufacturing capabilities. Marvel is pursuing a strategy of establishing relationships with larger companies as strategic partners. Marvel intends to partner or joint venture with larger pharmaceutical companies that have existing and relevant marketing capability for its products. It is anticipated that future clinical development of Marvel's product outside Canada would generally occur in conjunction with a strategic partner or partners, who would contribute expertise and financial assistance to the development. In exchange for certain product rights and commitments to market Marvel's product, the strategic partners would be expected to share in gross proceeds from the sale of Marvel's product. The proceeds generated from partnering or joint venturing projects are expected to be distributed on the basis of relative risk taken and resources contributed by each party or the partnership or joint venture.

### ***Product Marketing Strategy***

The markets for all products being developed by Marvel may be large and will require substantial sales and marketing capability. Upon successful completion of the pre-clinical efficacy studies, Marvel intends to enter into one or more strategic partnerships or other collaborative arrangements with a pharmaceutical company or other company with marketing and distribution expertise to address this need. If necessary, Marvel will establish arrangements with various partners for different geographical areas. Marvel's management has extensive experience with the partnering process.

### ***Competitive Conditions***

There are no known direct competitors for Marvel's developed compound assets for the disease targets selected which allows for Marvel to positioning to partner with larger pharmaceutical companies for specific assets developed.

## **OVERALL PERFORMANCE**

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### **Highlights and Notable Events**

Since the year ended July 31, 2022, the Company has continued its development program for its lead compound MB-204 with the goal of entering Phase 1 clinical trials in Q1 2023.

On August 9, 2022, the Company closed the second tranche of its non-brokered private placement of 2,700,000 units of the Company at a price of \$0.10 per unit for gross proceeds of \$270,000. Each unit consists of one common share of the Company and one share purchase warrant. Each share purchase warrant is exercisable at a price of \$0.15 per share.

On August 31, 2022, the Company highlights recent research indicating a link between non-alcoholic steatohepatitis and Alzheimer's Disease, two programs its lead asset, MB-204 are targeting.

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On September 26, 2022, the Company granted 1,425,000 common shares to directors and officers at an exercise price of \$0.10 expiring on July 14, 2027.

On October 17, 2022, the Company announced it has completed its maximum tolerated dose (MTD) toxicology study in rats for its product MB-204, validating its low toxicity. This is a positive result as the Company progresses forward future clinical studies. MTD studies define the highest dose of a drug or therapy that does not cause unacceptable side effects or toxicity. The purpose of the MTD study is to determine safe starting doses for first in-human clinical trials.

On October 25, 2022, the Company announced it has completed its MTD toxicology study in dogs for its product MB-204, further validating the Company's lead drug candidate's low toxicity characteristic. The successful results allowed the Company to move forward to 7-day dose ranging studies followed by the GLP toxicology studies in Q1 2023.

On November 1, 2022, the Company announced it has successfully completed a large-scale engineering run of its novel solid amorphous dispersion (SAD) formulation of MB-204. The material will be utilized to support the ongoing toxicology studies of MN-204

On November 7, 2022, the Company announced that in a pre-clinical mouse study conducted by the Company, its lead drug candidate MB-204 successfully entered the brain and occupied its target, the adenosine A2a receptor. The adenosine A2a receptor has been validated that it plays a role in various pathologies such as Alzheimer's Disease and depression.

On November 14, 2022, the Company announced that in a pre-clinical test for anxiety, its lead drug candidate MB-204, a fluorinated derivative of Istradefylline, out-performed Istradefylline in a head-to-head pre-clinical and in depressive and anti-anxiety studies. Istradefylline is the only US FDA approved A2a receptor antagonist currently approved to treat Parkinson's disease.

On November 22, 2022, the Company announced in a recent study done by the Company, its lead drug candidate MB-204 demonstrated a 400% increase in survival rate of animals being treated by high doses of chemotherapy treatment, cis-platinum. Cis-platinum is commonly used for a wide range of cancers and can have significant side effects, including kidney and nerve damage, cognitive dysfunction and hearing loss.

On November 24, 2022, the Company announced that Mr. Babak Pedram has joined the Board of Directors and that Jeremy Fehr had resigned from the Board of Directors.

On December 7, 2022, the Company announced that it has initiated its 7-day dose-ranging, toxicology study, using rats, for its lead molecule MB-204.

December 12, 2022, the Company announced it has initiated its 10-day, dose-ranging toxicology study, using dogs, for its lead drug candidate MB-204.

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**SUMMARY OF QUARTERLY RESULTS**

|                | <b>Oct 31, 2022</b> | <b>July 31, 2022</b> | <b>April 30, 2022</b> | <b>Jan 31, 2022</b> |
|----------------|---------------------|----------------------|-----------------------|---------------------|
|                | <b>\$</b>           | <b>\$</b>            | <b>\$</b>             | <b>\$</b>           |
| Revenue        | -                   | -                    | -                     | -                   |
| Net loss       | (296,204)           | (581,885)            | (392,277)             | (1,069,767)         |
| Loss per share | (0.01)              | (0.02)               | (0.01)                | (0.03)              |
| Total assets   | 831,119             | 913,541              | 714,344               | 921,096             |

|                | <b>Oct 31, 2021</b> | <b>July 31, 2021</b> | <b>April 30, 2021</b> | <b>Jan 31, 2021</b> |
|----------------|---------------------|----------------------|-----------------------|---------------------|
|                | <b>\$</b>           | <b>\$</b>            | <b>\$</b>             | <b>\$</b>           |
| Revenue        | -                   | -                    | -                     | -                   |
| Net loss       | (510,210)           | (2,805,051)          | (421,837)             | (167,658)           |
| Loss per share | (0.02)              | (0.15)               | (0.01)                | (0.01)              |
| Total assets   | 2,149,746           | 2,468,152            | 208,743               | 375,584             |

Loss for the quarter ended October 31, 2022, was lower than prior periods as the Company had reduced clinical study expenses as upcoming experiments were planned for Q4 2022 and Q1 2023.

For the three months ended July 31, 2022, the Company incurred a net loss of \$581,885. The net loss consists primarily of clinical study expenses of \$315,193 for the advancement of compounds, management and directors consulting fees of \$153,998 for day-to-day management of the company and general and administrative expenses of \$61,894 which consists of salaries and benefits.

For the three months ended April 30, 2022, the Company incurred a net loss of \$392,277. The net loss consists primarily of clinical study expenses of \$55,773 for the advancement of compounds, management and director consulting fees of \$204,540 for day-to-day management of the company and general and administrative expenses of \$63,011 which consists of salaries and benefits.

For the three months ended January 31, 2022, the Company incurred a net loss of \$1,069,767. The loss is the result of the management and directors consulting fees of \$179,879 for the day-to-day management of the Company, clinical study expenses of \$764,921 for the advancement of the compounds and professional fees of \$22,284 for the preparation of regulatory filings and general corporate matters, and general and administrative expenses which generally consists of salaries and benefits.

For the three months ended October 31, 2021, the Company incurred a net loss of \$510,210. Loss consisted primarily of clinical study expenses of \$241,273 and management and director consulting fees of \$167,963.

For the three months ended July 31, 2021, the Company incurred a net loss of \$2,805,051. The loss is attributed to the transaction costs of \$1,911,351, with the remainder of the costs associated with the Management Services Agreement, additional clinical study expenses and the contract termination expense.

For the three months ended April 30, 2021, the Company incurred a net loss of \$421,837. This loss is attributed to \$127,484 for management consulting fees, \$189,452 for clinical study expenses, and \$106,841 for professional fees for the legal costs for the transaction.

For the three months ended Jan 31, 2021, the Company incurred a loss of \$167,885, related to costs of \$120,699 for the management consulting fees, \$96,196 for clinical study expense, which was offset by a Government SR&ED income of \$136,294.

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### **Results of Operations – three months ended October 31, 2022**

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For the three months ended October 31, 2022, the Company had a net loss of \$296,204 (\$0.01 loss per share) compared to \$510,210 (\$0.02 loss per share), respectively, for the three months ended October 31, 2021. The change in net loss is due to the following:

- i. Clinical study expenses \$8,879 (2021 - \$241,273)  
The decrease is a result of the decrease in third party lab fees relating to the completion of studies completed to determine the validity and activity of compounds. The Company's currently scheduled studies are set to begin in Q4 2022 and Q1 2023.
- ii. Management and director consulting \$143,228 (2021 - \$167,963)  
The decrease during the three months ended October 31, 2022 is related to the decrease in consulting fees compared to prior period. Management fees include fees paid the CEO and the CSO.
- iii. General and administrative expenses \$66,944 (2021 - \$75,092)  
The costs are attributed to salaries and wages and general operating costs.
- iv. Travel expense \$14,094 (2021 - \$1,549)  
The increase is a result of increased corporate travel to raise market awareness for the Company.

### **LIQUIDITY AND CAPITAL RESOURCES**

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Management has determined that cash flows for operating, clinical study expenses, and general and administrative expenses will be funded by Marvel's existing cash on hand. Any expected short fall of cash required for these expenses will be funded by the issuance of common shares through private placements.

During the three months ended October 31, 2022, the Company closed the second tranche of its non-brokered private placement of 2,700,000 units of the Company at a price of \$0.10 per unit for gross proceeds of \$270,000.

The Company had a working capital surplus of \$227,841 as at October 31, 2022 compared to \$195,536 as at July 31, 2022 representing an increase of \$32,305. The increase in working capital is primarily due to the Company completing the financing and settling older trade payables.

### **FINANCING AND CAPITAL RESOURCES**

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During the three months ended October 31, 2022, the following shares were issued:

On August 9, 2022, the Company closed the second tranche of its non-brokered private placement of 2,700,000 units (the "Units") at a price of \$0.10 per Unit for gross proceeds of \$270,000. Each Unit is comprised of one common share of the Company and one share purchase warrant. Each share purchase warrant is exercisable at a price of \$0.15 per share.

Share issue costs of \$4,350 (2021 - \$nil) were incurred in relation to the above issuances.

During the three months ended October 31, 2021, the Company did not complete any financings.

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### **Contingencies**

#### *Contingent liabilities*

The Company does not have any contingent liabilities.

#### *Government scientific research and experimental development tax credits*

The Company has applied for Government SR&ED refundable tax credits related to the July 31, 2021, fiscal year end totaling \$287,747 and non-refundable tax credits totaling \$22,468 offset by \$74,746, for the preparation of the SR&ED applications, for a net refundable receivable of \$213,001. The amount will be received on the successful processing of the SR&ED applications.

Subsequent to October 31, 2022, the Company received \$145,410 in SR&ED claims.

### **RISK MANAGEMENT AND FINANCIAL INSTRUMENTS**

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Risk is inherent in all business activities and cannot be eliminated. However, shareholder value can be maintained and enhanced by identifying, mitigating, and where possible, insuring against these risks. The following section addresses some, but not all, risk factors that could affect Marvel's future results, as well as activities used to mitigate such risks. These risks do not occur in isolation but must be considered in conjunction with each other.

The Board of Directors have overall responsibility for the establishment and oversight of Marvel's risk management framework. The Board is responsible for developing and monitoring Marvel's compliance with risk management policies and procedures.

Marvel's risk management policies are established to identify and analyze the risks faced by Marvel, to set appropriate risk limits and controls, and to monitor risks and adherence to limits. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and Marvel's activities.

#### **Financial risks and financial instruments**

At the date of this MD&A, the Company's financial instruments consists of cash, accounts payable and accrued liabilities and due to related party.

The fair value of a financial instrument is a point in time estimate of the amount of consideration that would be agreed upon in an arm's length transaction between knowledgeable and willing parties who are under no compulsion to act. Marvel faces the risk that fair values of financial instruments will fluctuate or that estimates used regarding fair values will be inaccurate.

The carrying amount of cash, accounts payable and accrued liabilities, and due to related party included in Marvel's statements of financial position approximate their fair values because of the short-term nature of the instruments.

The Company's risk exposures and the impact on the Company's financial instruments are summarized below:

#### *Credit risk*

Credit risk is the risk of potential loss to the Company if the counterparty to a financial instrument fails to meet its contractual obligations. The Company's credit risk is primarily attributable to its liquid financial assets including cash. The Company limits exposure to credit risk on liquid financial assets through maintaining its cash with high-credit quality financial institutions.

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### *Liquidity risk*

The Company's approach to managing liquidity risk is to ensure that it will have sufficient liquidity to meet liabilities when due. As at October 31, 2022 the Company had a cash balance of \$535,928 (July 31, 2022 - \$593,207) to settle current liabilities of \$611,278 (July 31, 2022 - \$718,005). All of the Company's accounts payable and accrued liabilities have contractual maturities of 30 days or due on demand and are subject to normal trade terms. To maintain liquidity, the Company is currently investigating financing opportunities.

### *Market risk*

Market risk is the risk of loss that may arise from changes in market factors such as interest rates, foreign exchange rates, and commodity and equity prices. The Company does not have a practice of trading derivatives.

### *Interest rate risk*

The Company's financial assets exposed to interest rate risk consist of cash balances. The Company's current policy is to invest excess cash in investment-grade short-term deposit certificates issued by its banking institutions. The Company periodically monitors the investments it makes and is satisfied with the credit ratings of its banks. As at October 31, 2022 and 2021, the Company did not have any investments in investment-grade short-term deposit certificates.

### *Foreign currency risk*

A portion of the Company's financial assets and liabilities are denominated in foreign currencies giving rise to risks from changes in foreign exchange rates. As at October 31, 2022, future changes in exchange rate would not have a material impact on the Company's financial instruments. The Company does not use derivative financial instruments to reduce its foreign exchange exposure.

### *Price risk*

Other price risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate due to changes in market prices, other than those arising from interest rate risk or foreign currency risk. The Company is not exposed to significant other price risk.

## RELATED PARTY TRANSACTIONS

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Key management personnel include persons having the authority and responsibility for planning, directing, and controlling the activities of the Company as a whole. Compensation paid or payable to key personnel to be the executive and non-executive officers and directors of the Company, for services provided during the three months ended October 31, 2022 and 2021 are as follows:

|  | <b>2022</b>    | <b>2021</b>    |
|--|----------------|----------------|
|  | \$             | \$             |
| Management and consulting <sup>1</sup> | 75,000         | 108,000        |
| Professional fees <sup>2</sup>         | 18,750         | -              |
| General and administrative             | 9,918          | 9,918          |
| Share-based compensation               | 28,824         | -              |
|  | <b>132,492</b> | <b>117,918</b> |

<sup>1</sup>)Fees earned by Renaissance Mercantile., a company controlled by Rod Matheson, director and CEO of the Company; fees earned by Mark Williams, a director and CSO of the Company, and fees earned by Preston Maddin, the former CFO of the Company.

<sup>2</sup>)Fees earned by Harry Nijjar, CFO. The Company has a consulting agreement with Malaspina Consultants Inc., a company where Mr. Nijjar is a managing director.

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Included in accounts payable and accrued liabilities at October 31, 2022 are amounts due to related parties of \$28,567 (July 31, 2022 - \$78,583) for the above services.

Transactions with related parties are incurred in the normal course of business and initially recorded at fair value.

## OTHER INFORMATION

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Outstanding share data as at December 19, 2022

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|                                     |            |
|-------------------------------------|------------|
| Issued and outstanding shares       | 39,786,231 |
| Outstanding share purchase warrants | 12,900,000 |
| Outstanding stock options           | 3,150,000  |
| Total diluted common shares         | 55,836,231 |

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## INDUSTRY RISKS

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### ***Key management***

The success of the Company is dependent upon the ability, expertise, judgment, discretion, and good faith of its senior management. While employment agreements are customarily used as a primary method of retaining the services of key employees, these agreements cannot assure the continued services of such employees. Any loss of the services of such individuals could have a material adverse effect on the Company's business, operating results, or financial condition.

### ***Limited operating history***

The Company has no present prospect of generating revenue from the sale of products. The Company is therefore subject to many of the risks common to early-stage enterprises, including undercapitalization, cash shortages, limitations with respect to personnel, financial, and other resources, and lack of revenues. There is no assurance that the Company will be successful in achieving a return on shareholders' investment and the likelihood of success must be considered considering the early stage of operations.

### ***Biotech Public Market Risks***

Prospects for companies in the biotechnology industry generally may be regarded as uncertain given the nature of the industry and, accordingly, investments in biotechnology companies should be regarded as speculative. Biotechnology research and development involves a significant degree of risk. An investor should carefully consider the risks and uncertainties described below. The risks and uncertainties described below are not an exhaustive list. Additional risks and uncertainties not presently known to Marvel or that Marvel believes to be immaterial may also adversely affect Marvel's business. If any one or more of the following risks occur, Marvel business, financial condition and results of operations could be seriously harmed. Further, if Marvel fails to meet the expectations of the public market in any given period, the market price of Marvel shares could decline.

### ***Early Stage Development and Scientific Uncertainty***

Marvel's products are at an early stage of development. Significant additional investment in research and development, product validation, manufacturing, production scale-up, manufacturing, clinical testing, and regulatory submissions of such product candidates is required prior to commercialization. There can be no assurance that any such products will actually be developed. The development and regulatory processes may require access to raw materials and inputs which may not be available to Marvel in sufficient amounts or in a timely fashion to allow Marvel to complete the development or receive regulatory approval of any product or process. A commitment of substantial time and resources is required to conduct research and clinical trials if Marvel is to complete the development of any product. It is not known whether any of these

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product or process candidates will meet applicable health regulatory standards and obtain required regulatory approvals, or whether such products can be produced in commercial quantities at reasonable costs and be successfully marketed, or if Marvel 's investment in any such products will be recovered through sales or royalties. The Company's technology will require significant research and development and preclinical and clinical testing prior to regulatory approval, if required, being obtained in the Canada or other countries. The Company may not be able to obtain regulatory approvals, if required, to complete necessary clinical trials for its technology, or to commercialize it. The Company's technology may prove to have undesirable and unintended side effects, or other characteristics adversely affecting its safety, efficacy or cost-effectiveness could prevent or limit its use. The Company's technology may fail to provide its intended benefit or achieve benefits equal to or better than its competitor's products at the time of testing or production and, if so, its business may fail.

### ***Additional Financing Requirements and Access to Capital***

Marvel will require substantial additional funds for further research and development, planned clinical testing, regulatory approvals, establishment of manufacturing capabilities and, if necessary, the marketing and sale of its products. Marvel may attempt to raise additional funds for these purposes through public or private equity or debt financing, collaborations with other biopharmaceutical companies and/or from other sources. There can be no assurance that additional funding or partnership will be available on terms acceptable to Marvel and which would foster successful commercialization of Marvel products.

### ***Government Regulations***

Biotechnology and pharmaceutical companies operate in a high-risk regulatory environment. The manufacture and sale of human diagnostic and therapeutic products is governed by numerous statutes and regulations in the United States, Canada, and other countries where Marvel intends to market its products. The subject matter of such legislation includes approval of manufacturing facilities, controlled research and testing procedures, review and approval of manufacturing, preclinical and clinical data prior to marketing approval, as well as regulation of marketing activities, notably advertising and labelling.

The process of completing clinical testing and obtaining required approvals is likely to take several years and require the expenditure of substantial resources. Furthermore, there can be no assurance that the regulators will not require modification to any submissions which may result in delays or failure to obtain regulatory approvals. Any delay or failure to obtain regulatory approvals could adversely affect the ability of Marvel to utilize its technology, thereby adversely affecting operations. Further, there can be no assurance that Marvel's product candidates will achieve levels of sensitivity and specificity sufficient for regulatory approval or market acceptance, or that its therapeutic product candidates prove to be safe and effective in clinical trials or receive the requisite regulatory approval. There is no assurance that Marvel will be able to timely and profitably produce its products while complying with all the applicable regulatory requirements. Foreign markets, other than the United States and Canada, generally impose similar restrictions.

### ***Patents and Proprietary Technology***

Marvel's success will depend in part on its ability to obtain, maintain, and enforce patent rights, maintain trade secret protection, and operate without infringing the proprietary rights of third parties. There can be no assurance that pending patent applications will be allowed, that Marvel will develop additional proprietary products that are patentable, that issued patents will provide Marvel with any competitive advantage or will not be challenged by any third parties, or that patents of others will not have an adverse effect on the ability of Marvel to do business.

Furthermore, there can be no assurance that others will not independently develop similar products, duplicate any of the Marvel products, or design around the products patented by Marvel. In addition, Marvel may be required to obtain licenses under patents or other proprietary rights of third parties. No assurance can be given that any licenses required under such patents or proprietary rights will be available on terms

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acceptable to Marvel. If Marvel does not obtain such licenses it could encounter delays in introducing one or more of its products to the market, while it attempts to design around such patents, or could find that the development, manufacturing or sale of products requiring such licenses could be foreclosed. In addition, Marvel could incur substantial costs in defending itself in suits brought against it on such patents or in suits where it attempts to enforce its own patents against other parties.

Until such time, if ever, that patent applications are filed, the ability of Marvel to maintain the confidentiality of its technology may be crucial to its ultimate possible commercial success. While Marvel has adopted procedures designed to protect the confidentiality of its technology, no assurance can be given that such arrangements will be effective, that third parties will not gain access to Marvel trade secrets or disclose the technology, or that Marvel can meaningfully protect its rights to its trade secrets.

### ***Dependence on Collaborative Partners, Licensors and Others***

Marvel activities will or may require it to enter various arrangements with corporate and academic collaborators, licensors, licensees and others for the research, development, clinical testing, manufacturing, marketing, and commercialization of its products. Marvel intends to attract corporate partners and enter additional research collaborations. There can be no assurance, however, that Marvel will be able to establish such additional collaborations on favorable terms, if at all, or that its current or future collaborations will be successful. Failure to attract commercial partners for its products may result in Marvel incurring substantial clinical testing, manufacturing, and commercialization costs prior to realizing any revenue from product sales or result in delays or program discontinuance if funds are not available in sufficient quantities. If any collaborative partner fails to develop, manufacture, or successfully commercialize any product to which it has rights, or any partner's product to which Marvel will have rights, Marvel's business may be adversely affected. Failure of a collaborative partner to continue to participate in any program could delay or halt the development or commercialization of products generated from such program. In addition, there can be no assurance that the collaborative partners will not pursue other technologies or develop alternative products either alone or in collaboration with others, including Marvel's competitors, as a means for developing treatments for the diseases targeted by Marvel programs.

Furthermore, Marvel will or may hold licenses for certain technologies and there can be no assurance that these licenses will not be terminated, or that they will be renewed on conditions acceptable to Marvel. Marvel intends to negotiate additional licenses in respect of technologies developed by other companies and academic institutions. Terms of license agreements to be negotiated may include, inter alia, a requirement to make milestone payments, which may be substantial. Marvel will also be obligated to make royalty payments on the sales, if any, of products resulting from licensed technology and, in some instances, may be responsible for the costs of filing and prosecuting patent applications. Should any of Marvel licensees breach their regulatory, clinical, operational, or legal requirements this may impact Marvel reputation and/or ability to conduct its business or make progress as anticipated.

### ***Competition***

Technological competition from pharmaceutical companies, biopharmaceutical companies and universities are intense and is expected to increase. Potential competitors of Marvel have or may develop product development capabilities or financial, scientific, marketing, and human resources exceeding those of Marvel. Competitors may develop products before Marvel develops its own products, obtain regulatory approval for such products more rapidly than Marvel, or develop products which are more effective than those which Marvel intends to develop. Research and development by others may render Marvel's proposed technology or products obsolete or non-competitive or produce treatments or cures superior to any therapy developed or to be developed by Marvel, or otherwise preferred to any therapy developed by Marvel.

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### ***Potential Product Liability***

Pharmaceutical products involve an inherent risk of product liability claims and associated adverse publicity. Product liability insurance is costly, and availability is limited and may not be available on terms which would be acceptable to Marvel, if at all. An inability to maintain sufficient insurance coverage on reasonable terms or to otherwise protect against potential product liability claims could prevent or inhibit the commercialization of Marvel's products. A product liability claim brought against Marvel, or withdrawal of a product from the market, could have a material adverse effect upon Marvel and its financial condition.

### ***Volatility of Share Price, Absence of Dividends and Fluctuation of Operating Results***

Market prices for the securities of biotechnology companies, including Marvel, have historically been highly volatile. Factors such as fluctuation of Marvel operating results, announcements of technological innovations, patents or new commercial products by Marvel or competitors, results of clinical testing, regulatory actions, or public concern over the safety of biopharmaceutical products and other factors could have a significant effect on the share price or trading volumes for the common shares. Marvel's shares may be subject to significant price and volume fluctuations and may continue to be subject to significant price and volume fluctuations in the future.

### ***Conflict of Interest***

Certain of the directors and senior officers of Marvel may, from time to time, be employed by or affiliated with organizations which have entered into agreements with Marvel. As disputes may arise between these organizations and Marvel, or certain of these organizations may undertake or have undertaken research with competitors of Marvel, there exists the possibility for such persons to be in a position of conflict. Any decision or recommendation made by these persons involving Marvel will be made in accordance with his or her duties and obligations to deal fairly and in good faith with Marvel and such other organizations. In addition, as applicable, such directors and officers will refrain from voting on any matter in which they have a conflict of interest.

### ***No Anticipated Dividends***

The Company does not intend to pay dividends on any investment in the shares of stock of the Company. The Company has never paid any cash dividends and currently do not intend to pay any dividends for the foreseeable future. To the extent that the Company requires additional funding currently not provided for in its financing plan, its funding sources may prohibit the payment of a dividend. Because the Company does not intend to declare dividends, any gain on an investment in the Company will need to come through an increase in the stock's price. This may never happen, and investors may lose all their investment in the Company.

## **FINANCIAL AND DISCLOSURE CONTROLS AND PROCEDURES**

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In connection with National Instrument 52-109 (Certification of Disclosure in Issuer's Annual and Interim Filings) ("NI 52-109"), the Chief Executive Officer and Chief Financial Officer of the Company have filed a Venture Issuer Basic Certificate with respect to the financial information contained in the condensed interim consolidated financial statements for the three months ended October 31, 2022, and this accompanying MD&A (together the "Interim Filings").

In contrast to the full certificate under NI 52-109, the Venture Issuer Basic Certificate does not include representations relating to the establishment and maintenance of disclosure controls and procedures and internal control over financial reporting, as defined in NI 52-109. For further information the reader should refer to the Venture Issuer Basic Certificates filed by the Company with the Interim Filings on SEDAR at [www.sedar.com](http://www.sedar.com).