



**ALPHA COGNITION INC.**

Management's Discussion and Analysis  
For the three and six months ended June 30, 2023

(Expressed in United States Dollars)

## MANAGEMENT'S DISCUSSION AND ANALYSIS

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This Management's Discussion and Analysis ("MD&A") of Alpha Cognition Inc. ("ACI" or the "Company") provides analysis of the Company's financial results for the three and six months ended June 30, 2023. The following information should be read in conjunction with the accompanying audited financial statements and accompanying notes for the years ended December 31, 2022 and 2021 ("Annual Financial Statements") and the unaudited condensed interim consolidated financial statements and accompanying notes for the three and six months ended June 30, 2023 and 2022 ("Interim Financial Statements") which have been prepared in accordance with International Financial Reporting Standards ("IFRS"). The Board of Directors of the Company have approved the information and disclosures contained in this MD&A. All figures are in United States dollars ("USD") unless otherwise noted. Additional information relating to the Company is available on SEDAR at [www.sedarplus.ca](http://www.sedarplus.ca).

## FORWARD-LOOKING STATEMENTS

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The Company's Annual Financial Statements 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 at August 21, 2023.***

Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the Company's actual results, level of activity, performance or achievements to be materially different from those expressed or implied by such forward-looking information. The information set forth in this MD&A contains statements concerning future results, future performance, intentions, objectives, plans and expectations that are, or may be deemed to be, "forward-looking statements". These statements concerning possible or assumed future results of operations of the Company are preceded by, followed by or include the words "believes", "expects", "anticipates", "estimates", "intends", "plans", "forecasts", or similar expressions. Forward-looking statements are not guarantees of future performance. These forward-looking statements are based on current expectations that involve certain risks, uncertainties and assumptions. Assumptions relating to the foregoing involve judgments with respect to, among other things, future economic, competitive and market conditions and future business decisions, all of which are difficult or impossible to predict accurately and many of which underlying the forward-looking statements are reasonable, any of the assumptions could prove inaccurate. These factors should be considered carefully, and readers should not place undue reliance on forward-looking statements. The Company has no intention and undertakes no obligation to update or revise any forward-looking statements, whether written or oral that may be made by or on the Company's behalf, except as may be required by applicable law.

All of the Company's public disclosure filings may be accessed via [www.sedarplus.ca](http://www.sedarplus.ca) and readers are urged to review these materials.

## COMPANY DESCRIPTION

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ACI is the parent company of Alpha Cognition Canada Inc. ("ACI Canada") which is the parent company of Alpha Cognition USA Inc. ("ACI USA"). As of May 1, 2023, the Company's common shares commenced trading on the Canadian Securities Exchange ("CSE") under the symbol "ACOG", previously the Company's shares were traded on the TSX Venture Exchange ("TSX-V") until April 28, 2023 when the Company had them delisted. The Company's shares also trade on the Over-The-Counter Markets ("OTC") under the trading symbol "ACOGF".

The Company is a clinical stage, biopharmaceutical company dedicated to developing treatments for patients suffering from neurodegenerative diseases, such as Alzheimer's Disease ("AD") and cognitive impairment with Traumatic Brain Injury ("TBI"), for which there are limited or no treatment options. The Company is focused on the development of ALPHA-1062 for the treatment of mild-to-moderate Alzheimer's Disease with a near-

term goal of NDA submission and FDA approval and commercial sales of ALPHA-1062 oral tablet formulation. The Company's ALPHA-1062 development program is primarily focused on clinical and regulatory development, Chemistry, Manufacturing and Control ("CMC") development, and commercial readiness. The Company has three additional development programs: ALPHA-1062 in combination with memantine for the treatment of moderate-to-severe Alzheimer's Disease, ALPHA-1062 intranasal formulation for the treatment of cognitive impairment with mild traumatic brain injury (mTBI), and ALPHA-0602, previously referred to as 'Progranulin', for the treatment of amyotrophic lateral sclerosis, otherwise known as ALS or Lou Gehrig's disease.

ALPHA-1062, is a patented new innovative product being developed as a next generation acetylcholinesterase inhibitor for the treatment of Alzheimer's Disease, with expected minimal gastrointestinal side effects. ALPHA-1062's active metabolite is differentiated from donepezil and rivastigmine in that it binds neuronal nicotinic receptors, most notably the alpha-7 subtype, which is known to have a positive effect on cognition. ALPHA-1062 is in development in combination with memantine to treat moderate to severe Alzheimer's Disease and as an intranasal formulation for cognitive impairment with TBI.

ALPHA-0602 ("Progranulin") is expressed in several cell types in the central nervous system and in peripheral tissues, promotes cell survival, regulates certain inflammatory processes, and plays a significant role in regulating lysosomal function and microglial responses to disease. Its intended use for the treatment of neurodegenerative diseases has been patented by the Company and ALPHA-0602 has been granted an Orphan Drug Designation for the treatment of ALS by the FDA. ALPHA-0702 and ALPHA-0802 are Granulin Epithelin Motifs, ("**GEMS**"), derived from full length progranulin which have therapeutic potential across multiple neurodegenerative diseases. GEMs have been shown to be important in regulating cell growth, survival, repair, and inflammation. ALPHA-0702 and ALPHA-0802 are designed to deliver this with potentially lower toxicity, and greater therapeutic effect.

### **Business Objectives and Milestones**

The Company's principal business objectives are to: 1) File an NDA for ALPHA-1062 in mild-to-moderate Alzheimer's disease; 2) Continue to advance its development and commercialization activities for ALPHA-1062 in mild-to-moderate Alzheimer's disease, including the clinical trial program development and clinical manufacturing for ALPHA-1062; 3) Advance TBI R&D program after pre-IND meeting held during the second quarter of 2023; and; 4) Pursue the out-licensing its TBI indication a newly formed and funded company Alpha Seven Therapeutics, Inc. ("Alpha Seven"), where the TBI indication can be further developed through complete Investigational New Drug application ("IND") submission following the completion of additional toxicity study and formulation work.

In order to meet these business objectives, the Company will need to initiate or complete the following milestones over the next year and a half:

- *File the NDA Package ALPHA-1062 - The Company will prepare a complete New Drug Application ("NDA") package for ALPHA-1062 in mid-to-moderate Alzheimer's disease to submit to the Food and Drug Administration ("FDA") for drug approval and subsequent commercialization. The Company will meet with the FDA at a pre-NDA meeting to review and discuss the package details and align with FDA expectations. The Company plans to file the NDA package with the FDA in the third quarter of 2023 timeframe. The NDA package will include the preclinical studies, clinical studies, manufacturing and controls, regulatory, quality and any other data necessary for the FDA to review ALPHA-1062 for US approval. Costs for NDA filing are expected to include regulatory and CMC preparation, medical writing, and submission to FDA in its required format.*
- *Commercialization – The Company plans to continue its development activities and commercialization preparations around ALPHA-1062. CMC activities may involve continuing to refine and defining manufacturing practices and product specifications to be followed and met to ensure product safety and consistency between batches. This will include further CMC activities specifically to target commercial batches. The Company will also refine its commercialization marketing plan which includes*

target markets, customer types to prioritize, resources to utilize, commercialization positioning, marketing messages, and operational plans post approval.

- ALPHA-1062 U.S. product approval for treatment of mild-to-moderate Alzheimer's disease – The Company will negotiate the commercial label and approval of the product with FDA, which is anticipated in Q3 2024. If approved, this would be one of four products approved for Alzheimer's disease in the last decade. The approval would represent a next generation oral treatment for disease that ameliorates symptoms of Alzheimer's disease. Approval could provide the Company with significant new business opportunities for commercial and/or development partners.
- Obtain IND for ALPHA-1062 Intranasal for TBI – The Company met with the FDA in a pre-IND meeting for ALPHA-1062 Intranasal ("ALPHA-1062IN") for Cognitive Impairment with TBI. The Company sought alignment with FDA on a number of manufacturing, pre-clinical, and clinical matters, which would lead to an IND file. The FDA grants IND's when all preclinical work is completed to enter into human subjects. The FDA indicated during this meeting that the company needs to complete additional toxicity work to align with the contemplated Phase 2 trial the Company has proposed, and complete additional manufacturing work which the company had anticipated would be required as part of normal development and manufacturing controls. The Company expects Alpha Seven (see TBI out-licensing discussion below) will initiate the additional toxicity direct manufacturing work which would be anticipated to completed by 2H, 2024. Alpha Seven would then be in the position to file an IND for ALPHA-1062IN.
- ALPHA-1062 Intranasal for TBI out-licensing – The Company plans to out-license the TBI asset into the Alpha Seven where Alpha Seven plans to raise the additional capital to advance the TBI program. The Company would initially make up the largest shareholder of the Alpha Seven, but anticipates that all shareholders will be diluted as new capital is raised for research and development ("R&D"). The amount of dilution will be determined by capital raised and valuation of the Alpha Seven. The Company expects to include the following in the TBI out-license agreement with the Alpha Seven: intellectual property specific to TBI, implementation of a data sharing agreement, and supply and comprehensive maintenance agreements for technology advancements. The Company also intends to utilize existing Company management and new consultants experienced in TBI research and development to staff Alpha Seven.

The foregoing business objectives will be adjusted based on available funds. The Company may need to extend the estimated timeframe for achieving the milestones and objectives set out above if it does not complete additional financings.

### **Going Concern and Additional Capital Required**

The Company has not generated revenues from its operations to date and as at June 30, 2023, had a deficit of \$54,345,414 (December 31, 2022 - \$49,986,851) which has been primarily financed by equity. The Company had \$1,217,771 in cash and \$1,012,849 in current liabilities as of June 30, 2023. The Company's continuing operations, as intended, are highly dependent upon its ability to obtain additional funding and generate cash flows. Management is of the opinion that it does not have sufficient working capital to fully meet the Company's liabilities and commitments as outlined and planned in the following discussion. Management is of the opinion it will need to raise additional capital to cover upcoming planned R&D and operating costs. Possible sources of such capital may come from private placements and public offerings of the Company's common shares and funds received from the exercise of warrants and share options, including the private placement offering currently underway. Additionally, the Company will also consider funding that may arise through partnership activities and debt. There is a risk that additional financing will not be available on a timely basis, on terms acceptable, or at all to the Company. These factors indicate the existence of a material uncertainty which causes significant doubt in the ability of the Company to continue as a going concern.

The Company has maintained the cost cutting measures it initiated in the third quarter of 2022 to extend its cash runway and reduce ongoing cash burn. The Company focus has been to streamline R&D programs and has prioritized spend towards the NDA filing and development of ALPHA-1062 in AD. The Company reduced headcount and other operating costs to focus spending on the ALPHA-1062 NDA file and other related development costs. The Company expects to continue to operate under the lower operating burn during the NDA filing and approval period or until further additional capital can be secured. If we are unable to raise adequate funds, we may have to further delay or reduce the scope of or eliminate some or all of our current research and development. Any of these actions could have a material adverse effect on our business, results of operations or financial condition.

### **Capital Raising**

During the first quarter of 2023 the Company completed a private placement by issuing 23,747,648 units at a price of CAD\$0.255 for total proceeds of \$4,506,055 (CAD\$6,055,650) with each unit consisting of one Common share and one warrant exercisable at a price of CAD\$0.39 per warrant for a term of 5 years from the closing date ("Q1 2023 PP").

- On February 16, 2023 the Company closed the first tranche of the Q1 2023 PP by issuing 16,795,221 units of the Company for gross proceeds of CAD\$4,282,781.
- On March 16, 2023, the Company closed the second tranche of the Q1 2023 PP by issuing 6,952,427 units of the Company for gross proceeds of CAD\$1,772,869.

The net proceeds from the Q1 2023 PP are expected to be used for the advancement of the Company's clinical development programs, to complete and file a NDA for ALPHA-1062, and for general corporate purposes. All securities issued pursuant to the Q1 2023 PP are subject to a four month statutory hold period under Canadian securities laws, and restrictions under U.S. securities laws which generally restrict resales for a period of 12 months.

In connection with the Q1 2023 PP, Spartan Securities LLC ("Spartan") received cash compensation of US\$172,480, and was issued 2,129,566 common shares of the Company and 324,642 common share purchase warrants which may be exercised on the same terms as the unit warrants.

### **Announcement of additional Capital Raise & TBI out-licensing plans**

On May 30 2023, the Company announced a best efforts private placement offering of up to US\$6,500,000 of units at the initial pricing of US\$0.22 per unit (the "Q2 2023 PP"). Each unit consists of one common share and one-half of a warrant. Each whole warrant will entitle the holder to purchase an additional common share of the Company at the initial pricing of US\$0.31 per share for a period of three years from the closing date. The aggregate proceeds may be increased by 30% to accommodate any over-allotment. The Company also announced that it entered into an Investment Banking Agreement ("IBA") with Spartan, pursuant to which Spartan will act as agent on a best efforts basis in connection with the Q2 2023 PP. In accordance with the Q2 2023 PP, the Company has agreed to pay Spartan cash commissions of 10% of the gross proceeds, issue Spartan finder's warrants equal to 10% of the number of the warrants issued to investors, in each case excluding investors on the Company's president's list, and pay Spartan a non-accountable expense fee equal to 5% of the gross proceeds of the Q2 2023 PP excluding the president's list.

As at the date of this report, no proceeds have been received for the Q2 2023 PP.

The Company has also agreed to enter into an ongoing consulting services agreement for a three year term with Spartan. The services will include advising and assisting on potential business development transactions, strategic introductions, assisting management with enhancing corporate and shareholder value, and capital raising advice. The Company will pay Spartan a consulting fee in the aggregate amount of \$480,000, payable in three equal installments with each installment being subject to the Company achieving certain business development and capital raising objectives. Spartan will also be entitled to earn and receive additional common shares of the Company such that Spartan will hold 10.6% of the outstanding common shares of the Company determined as at the closing of the offering, inclusive of the 2,129,566 common shares currently held by Spartan. The additional common shares will be issued to Spartan on a rolling basis upon completion of

predetermined business development objectives including the closing of certain offering amounts and the completion of material business transactions.

### ALPHA-1062

ALPHA-1062 is a patented new innovative product for Alzheimer's disease. When absorbed through mucosal tissue or ingested it is enzymatically converted to an active moiety that has previously been approved by the FDA and marketed by Janssen, a wholly-owned subsidiary of Johnson & Johnson, as Razadyne (generic name is galantamine) in North America, and as Reminyl in Europe and elsewhere. Patients treated with Razadyne experience gastrointestinal side effects which can limit its effectiveness. ALPHA-1062, a prodrug of galantamine, however may have reduced gastrointestinal side effects which could allow for faster dosing titration and may facilitate achieving therapeutic dosing levels faster. Drugs that convert from an inert form to an active substance in-situ are referred to as "prodrugs". At the time the Company licensed the ALPHA-1062 technology, only an intranasal formulation had been developed, and subsequently oral dosage formulations have been developed.

The Company's ALPHA-1062 development plan has two primary goals:

- **Clinical Development:** Demonstrate, to the satisfaction of regulatory bodies, that ALPHA-1062 formulations have a significantly reduced side effect profile and differentiated mechanism of action (MOA) from existing acetylcholinesterase inhibitor (AChEI) treatments, with the exception of galantamine's MOA.
- **Regulatory:** Demonstrate that an NDA pathway called a 505(b)(2) is available for approval in the United States, allowing commercialization, that relies on the establishment of a scientific bridge to the findings of safety and efficacy of the FDA approved Razadyne utilizing a bioavailability and bioequivalence pivotal study instead of the traditional efficacy trials.
- On July 19, 2023, the Company received the FDA's confirmation that the Company meets the statutory requirements of the FD&C Act and grants the request for a small business waiver of the application fee for NDA 218549 for Galantamine Benzoate, provided the marketing application is received by FDA within one year from the date of the letter. The small business waiver of NDA and biologics license application fees could save the Company an amount to up to US\$3,200,000.

On August 10, 2023, the Company announced the United States Patent and Trademark Office (USPTO) has issued a Notice of Allowance for patent application No. 17/575,025, titled "Solid Forms of ALPHA-1062 Gluconate," which includes claims covering protection for crystalline solid forms of ALPHA-1062 and will bolster existing patents that the company holds. A Notice of Allowance is issued after the USPTO makes the determination that a patent should be granted from an application. This Notice of Allowance signifies a pivotal step forward in the company's journey and is the result of years of relentless research and development, conducted by Alpha Cognition's team of esteemed scientists, researchers, and medical experts.

### ALPHA-1062 Clinical Development

The original nasal formulation of ALPHA-1062 was used to conduct Phase I human studies, initially by Neurodyn, a former related party through common shareholders, and subsequently, on completion of the ALPHA-1062 license agreement, by the Company. The Phase I human studies included a single ascending dose study ("**SAD Study**") followed by a multiple ascending dose ("**MAD Study**") study. These Phase I studies were designed to determine the safety of the drug, which was administered to healthy subjects, including elderly, at increasing doses of ALPHA-1062, initially one time in the SAD Study, and subsequently multiple times over a seven-day period in the MAD Study. These studies indicated that ALPHA-1062 formulations may have reduced gastrointestinal side effects (nausea, diarrhea, vomiting) as compared to one of the existing treatments; Razadyne (galantamine is the generic name).

**Pivotal Trial:** The Company successfully completed two studies in Q2 2022 and a third in Q3 2022. The studies were designed to demonstrate pharmacokinetic equivalence compared to the reference listed drug galantamine hydrobromide immediate release and galantamine hydrobromide extended release, which are the standard of care treatments for patients with mild to moderate Alzheimer's Disease. Topline results confirmed in bioequivalence studies that ALPHA-1062 achieved bioequivalent area-under-the-curve (fed and fasted) and peak exposures (fed) relative to galantamine hydrobromide immediate release and galantamine hydrobromide

extended release. There were minimal adverse events (<3%) reported for ALPHA-1062 during these studies. With these positive pivotal study results, the Company plans to file an NDA for ALPHA-1062 in mild to moderate Alzheimer's Disease during Q3 2023, with possible FDA approval for the U.S. market by Q3 2024.

The following table summarizes the results of the ALPHA-1062 Pivotal Study BABE Study vs. Immediate Release (completed in June 2022) and an additional BABE Study vs. Extended Release (completed in August 2022).

BABE Study vs. Immediate Release					BABE Study vs. Extended Release				
PK Parameter	ALPHA-1062 Delayed Release 5mg (n=36)	Gal HBr Immediate Release 4mg (n=36)	% to Reference Drug 80-125%	Sufficient Data for NDA Filing	PK Parameter	ALPHA-1062 Delayed Release 5mg (n=20)	Gal HBr Extended Release 8mg (n=20)	% to Reference Drug 80-125%	Sufficient Data for NDA Filing
AUC <sub>0-inf</sub> (µg × h/mL) Fasted State	306.8	321.5	95%	✓	AUC <sub>0-24</sub> (µg × h/mL) Steady State	527.5	492.1	107%	✓
C <sub>max</sub> (ng/mL) Fasted State	30.7	40.5	76%	✓	C <sub>max</sub> (ng/mL) Steady State	41.7	32.8	127%	✓
AUC <sub>0-inf</sub> (µg × h/mL) Fed State	286.7	329.9	87%	✓					
C <sub>max</sub> (ng/mL) Fed State	27.6	30.2	91%	✓					

- Data confirms **ALPHA-1062 AUC is bioequivalent to galantamine hydrobromide IR and ER**
- C<sub>max</sub> for ALPHA-1062 is bracketed between IR and ER (lower than IR, higher than ER) providing necessary data for NDA filing (scientific bridge)
- **Minimal Adverse Events** reported in these trials of healthy volunteers
- **Allows NDA filing** based on 505(b)(2) requirements

90% Confidence Interval (CI) acceptance criteria is 80-125% for the test/reference ratio

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1. Alpha Cognition: Sublingual and Enteric Coated Tablet equivalent to 8 mg RAZADYNE Data on file  
2. DA Guidance: <https://www.fda.gov/files/drugs/publicated/Bioavailability-and-Bioequivalence-Studies-Submitted-in-NDAs-or-INDs>

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### BABE Study vs. Immediate Release

The primary objective of both the fed and fasted studies was to evaluate the relative bioavailability of a single-dose of ALPHA-1062 (or galantamine benzoate) 5mg delayed release tablet compared to galantamine hydrobromide tablet 4mg immediate release – the reference drug. Thirty-six healthy subjects were enrolled in each trial.

Two drug products are recognized to be bioequivalent if the 90% confidence interval of the ratio of geometric means of the primary pharmacokinetic (PK) responses (after log-transformation) is within the bioequivalence limits of 80% and 125%.

A secondary objective of the studies was to evaluate the safety and tolerability of single-dose administration of ALPHA-1062 5mg tablet. The primary pharmacokinetic outcomes were AUC or area under the curve, and C<sub>max</sub>, the highest concentration of drug in the blood. The area under the curve represents the total exposure to the active drug galantamine over time after a single administration, and the C<sub>max</sub> represents the highest peak exposure to galantamine.

Bioequivalence of ALPHA-1062 to galantamine hydrobromide was established in both the fed and fasted studies with the 90% confidence intervals for area under the curve falling within the 80%-125% bioequivalence range. The mean area under the curve ratio to reference drug for ALPHA-1062 was 95% (306.8) in the fasted study and 87% (286.7) in the fed study.

The average C<sub>max</sub> ratio to reference drug for ALPHA-1062 was 76% (30.7) in the fasted study and 91% (27.6) in the fed study both C<sub>max</sub> results being higher than the published C<sub>max</sub> data for galantamine hydrobromide 8 mg extended release capsule. Bioequivalence of ALPHA-1062 has been demonstrated based on overall drug exposure in both the fed and fasted states, and the C<sub>max</sub> with ALPHA-1062's delayed release formulation is expectedly lower than that of the immediate release formulation of galantamine, yet higher than the published data with galantamine extended release capsule. Bioequivalence of ALPHA-1062 was established on C<sub>max</sub>

compared to galantamine hydrobromide in the fed state. When the C<sub>max</sub> of a proposed drug product falls between the reported C<sub>max</sub> of two formulations of an approved reference product (immediate and extended release), this allows for an effective scientific bridge to both formulations of the reference standard galantamine hydrobromide. Single-dose administration of ALPHA-1062 was well tolerated with no adverse events reported.

#### BABE Study vs. Extended Release

During August 2022, the Company announced positive results from an additional bioequivalence study with ALPHA-1062. The company elected to conduct this additional study which was designed to demonstrate pharmacokinetic (PK) equivalence between 5 mg ALPHA-1062 delayed release tablets and 8 mg galantamine hydrobromide extended release capsules, when dosed to steady state. Bioequivalence was established based on total drug exposure (AUC) and the C<sub>max</sub> was expectedly higher than that of the extended release reference. These data, coupled with the positive pivotal data released in June, establish bioequivalence to both formulations of galantamine hydrobromide and strengthen the NDA application for ALPHA-1062 in mild-to-moderate Alzheimer's Disease, planned for Q3 2023. The Company is preparing to file the NDA with the FDA.

The study was a two-treatment, two-period, crossover study wherein 40 subjects were randomly assigned 1:1 to either treatment with ALPHA-1062 5mg twice daily, or galantamine hydrobromide 8mg ER capsules once daily, for 7 days. After a one-week washout period, subjects were then crossed over to the other treatment arm and dosed for 7 days.

Topline results confirmed that in healthy adult volunteers treated to steady state, ALPHA-1062 was bioequivalent to galantamine hydrobromide extended release. In the pre-specified primary analysis, ALPHA-1062 achieved area-under-the-curve and peak exposures (C<sub>max</sub>) of approximately 107% and 127%, respectively, compared to those generated by galantamine hydrobromide extended release. As expected, C<sub>max</sub> results for ALPHA-1062 is bracketed between galantamine hydrobromide immediate release and galantamine hydrobromide extended release (lower than immediate release, higher than extended release) providing a robust and enhanced data set for the NDA filing. These data further describe the delayed release profile of ALPHA-1062 and strengthen the NDA data set by characterizing the therapeutic and acceptable exposures compared to both the immediate release and extended release products.

During the second quarter of 2022, the Company met with FDA regarding the ALPHA-1062 program for mild-to-moderate Alzheimer's Disease. The Company received feedback regarding the ALPHA-1062 RESOLVE trial, labeling, and manufacturing. As a result of the agency's feedback, the Company plans to file its NDA for ALPHA-1062 in mild-to-moderate Alzheimer's Disease in Q3 2023, allowing the Company to include additional CMC stability data in the NDA filing. The Company's projected approval date for ALPHA-1062 is Q3 2024.

**RESOLVE Tolerability Study:** Following NDA approval for ALPHA-1062 in mild to moderate Alzheimer's Disease, the Company plans to initiate an Alzheimer's Disease tolerability and dosing trial with ALPHA-1062 called the RESOLVE Study which could potentially support prescribing information changes, post-approval, and could allow patients to achieve an efficacious dose more quickly than with current treatments. While not required for ALPHA-1062 NDA approval, RESOLVE data would be utilized to enhance the commercialization of ALPHA-1062. Significant trial preparation has already been completed. Processes and data management support has been established, and a number of potential sites have been identified, evaluated, qualified and readied for activation. Institutional Review Board approval has been received and the final study protocol has been submitted to the IND. The Company expects to initiate its RESOLVE trial in Q4 2024, following NDA approval of ALPHA-1062 and securing additional capital.

**Mild Traumatic Brain Injury (mTBI):** The Company has also completed a pre-clinical study of ALPHA-1062IN in mTBI. The Company is encouraged by the preclinical data and met with the FDA in Q2 2023 to discuss IND submission and gain alignment with FDA on further clinical plans. FDA indicated in this meeting that further toxicity and manufacturing work will be needed to file IND and enter into a Phase 2 trial. The Company expects Alpha Seven will initiate the additional toxicity direct manufacturing work which, would be anticipated to be completed by 2H, 2024. Alpha Seven would then be in the position to file an IND for ALPHA-1062IN. In December 2021, the Company announced functional data from the ALPHA-1062 TBI program. ALPHA-1062 intranasal administration significantly reduced the extent of the functional deficit, and improved functional recovery of TBI animals compared to untreated animals suffering a TBI. Notably, in four of five functional



measures of recovery, the performance of the ALPHA-1062IN treated group was statistically indistinguishable from that of the uninjured cohort.

In a rodent model of TBI, ALPHA-1062IN or vehicle (purified water as treatment control) was administered intranasally, with treatment initiated 2 hours after injury and continued twice daily for 35 days. ALPHA-1062IN significantly:

- Acutely limited the extent of motor deficit.
- Improved motor and sensory functional recovery measured by motor skill assessment, sensory/motor skill assessment, and Modified Neurological Severity Score which comprises motor, sensory, balance and reflex assessment.
- Improved cognitive functional recovery measured by tests which assess recognition memory, and spatial learning and memory.

In February 2022 the Company announced histology data from their intranasal ALPHA-1062IN TBI program. ALPHA-1062IN treatment was neuroprotective, preserving hippocampal structure, reducing cell loss and promoting neurogenesis compared to no treatment. These histological results, confirm the functional preservation/recovery data, and taken together, strongly support the further development of ALPHA-1062IN for the treatment of TBI.

Compared to vehicle, ALPHA-1062IN treatment:

- Demonstrated statistically significant reduction in lesion size measured at 35 days after injury.
- Preserved greater hippocampal structure. The hippocampus plays a critical role in learning, memory formation, and spatial coding and damage to hippocampus can lead to memory disorders like AD, amnesia, and depression.
- Demonstrated statistically, significant reduction in neuronal cell loss. The number of neurons in the ALPHA-1062IN treated animals were equivalent to those in the uninjured cohort of animals at the end of treatment.
- Statistically significantly enhanced neurogenesis as evidence by an increase in the number of neuron precursor cells and new neurons in the dentate gyrus, which plays a critical role in learning, information processing, and mood regulation.

### **TBI Out-Licensing Plan**

The Company is proposing to out-license the limited use of ALPHA-1062IN to Alpha Seven. Initially Alpha Seven Management (the "Alpha Seven Management") will hold approximately 14.6% ownership interest of the Alpha Seven. While the Company and its subsidiaries would initially make up the largest shareholder of Alpha Seven, it is anticipated that all Alpha Seven shareholders will be diluted as new capital is raised for research and development. The amount of dilution will be determined by capital raised and valuation of the Alpha Seven. Spartan's interest will be subject to completion of an initial financing for gross proceeds to Alpha Seven no less than US\$1 million. Alpha Seven Management's ownership will be granted and issued up front, subject to the completion of a one year term of service. Should a member of the Alpha Seven Management team resign their position prior to completion of the full one year term, 1/13th of the total shares granted and issued to such executive will be required to be returned to the Company and cancelled for each full month not completed of the term. Alpha Seven Management is expected to be as follows: Michael McFadden, the Chief Executive Officer and a director of the Company, is expected to serve as Chief Executive Officer of Alpha Seven, Donald Kalkofen, the Chief Financial Officer of the Company is expected to serve as Chief Financial Officer of Alpha Seven, and Lauren D'Angelo, the Chief Commercial Officer of the Company, is expected to serve as Chief Business Officer of Alpha Seven.

The Company met with FDA in a pre-IND meeting in Q2, 2023. The meeting was scheduled to align with FDA on pre-clinical, clinical, and manufacturing items necessary to file an IND and initiate a Phase 2 trial. As a result of FDA feedback, and following the out-licensing to Alpha Seven and its needed capital raise, Alpha Seven will be in a position to direct the additional manufacturing work and complete toxicity work which will allow Alpha Seven to initiate a Phase 2 clinical study.

The establishment and funding of Alpha Seven as described above are at the proposal stage only. There is no guarantee that the Company will be successful at launching Alpha Seven as a separately funded entity as described

above or at all. If successfully launched, there is no guarantee that Alpha Seven will be successful in advancing the ALPHA-1062IN for use in TBI or mTBI.

#### ALPHA-1062 Alzheimer's Disease Commercialization Strategy

During the second half of 2021 the Company started, in parallel with the Company's regulatory activities, taking steps to develop a commercialization team to manage ensure a successful launch in the U.S. The Company has completed sufficient planning to indicate that ALPHA-1062 could be launched using a best-in-class specialty sales force that will focus on Neurology and Long Term Care (LTC) physicians in the U.S. Neurologists that specialize in Alzheimer's treatment make pharmacologic decisions for Alzheimer's patients in a clinical setting. Long term care physicians who treat elderly patients that reside in nursing homes also make pharmacologic decisions in concert with the LTC treatment team. Our research has indicated that the acetylcholinesterase inhibitor (AChEI) prescription market in the U.S. from these two specialties is large, representing 63% of the over 11 million prescriptions filled in pharmacies each year. The AChEI class includes Aricept, Exelon, Exelon Patch, Razadyne, Adlarity, and generic versions of each brand. Prescription data suggests that there is currently high turnover of patients treated with currently approved AChEI medications, with 30% of patients discontinuing treatment by month 4 and 55% discontinuing treatment within one year. The Company believes that patients who discontinue a first therapy will try a 2nd and 3rd line therapy. Patient willingness to try multiple therapeutics provides an opportunity for ALPHA-1062 to take market share in the overall AChEI market. The sales force will message potential key points of label differentiation and exploit key issues with existing AChEI medications. Success will be further enabled by deploying a highly targeted and efficient multi-channel marketing campaign, by motivating caregivers to request ALPHA-1062, and securing product coverage with U.S. payors. Market research indicates that payors are likely to cover ALPHA-1062 if the product is competitively priced. Additionally, the Company intends to seek strategic partnerships to expand promotional efforts and expand physician promotional coverage. As ALPHA-1062 nears FDA regulatory approval, the Company will seek distribution partners for major territories, identified as Europe, LATAM (Mexico, Central and South America), and Asia. Additionally, the Company intends to seek approval for potential additional indications and product line extensions.

#### Specialized Skill and Knowledge

The development of pharmaceutical products is a complex undertaking which requires many diverse skill sets. Given the international nature of drug development, there are numerous companies and organizations which service the pharmaceutical industry. The Company has had no difficulty to date contracting with the various specialized service providers required to complete a drug development program.

The Company has assembled a management team capable of overseeing the various contract development, manufacturing organizations which have been retained to assist the Company in the ALPHA-1062 development program. The Company is also in the process of assembling a commercialization team with the experience and skills necessary to commercialize ALPHA-1062, should it be approved.

#### Competitive Conditions

Alzheimer's Disease symptomatic treatments are currently limited and perceived to provide limited symptom improvement and cause difficult to manage tolerability side effects. Symptomatic treatments are designed to improve the ability to learn, remember data, and function normally with daily tasks like toileting, cooking, or home care. Each year greater than 2 million patients are on medication for the disease, which makes up half of the estimated number of people with Alzheimer's Disease in the U.S. Approximately 70% of patients with mild Alzheimer's Disease, 80% with moderate, and 75% with severe Alzheimer's Disease are on drug-treatment. On average, it can take up to 2.5 months from diagnosis to treatment, but can take up to 2 years, and roughly 32% will never go on treatment. Patients are treated primarily with symptomatic medications to help the cognitive and functional symptoms of Alzheimer's Disease. In addition to symptomatic treatments, patients will also be prescribed behavioral and psychiatric medications for depression, hallucinations, aggression and agitation.

There are four symptomatic drug treatments that have been approved by the FDA to date for mild to moderate Alzheimer's Disease.

1. Donepezil (marketed under the brand name, Aricept by Eisai and Pfizer)
  - a. First-to-market, approved in 1996; generic
  - b. Acetylcholinesterase inhibitor drug class, oral QD medication
  - c. Indicated for mild-to-moderate and moderate-to-severe stages of Alzheimer's Disease
2. Rivastigmine capsules and patch (marketed under the brand name Exelon / Exelon Patch by Novartis)
  - a. Approved in 2000; 2007 generic
  - b. Exelon capsules: Acetylcholinesterase inhibitor drug class, oral BID tablet and oral solution
  - c. Exelon Patch: Acetylcholinesterase inhibitor drug class, daily transdermal system
  - d. Indicated for mild-to-moderate and moderate-to-severe stages of Alzheimer's Disease
3. Galantamine (marketed under the brand names Reminyl and Razadyne /Razadyn ER by Janssen)
  - a. Approved in 2001, 2004; generic
  - b. Acetylcholinesterase inhibitor drug class, oral BID medication
  - c. Indicated for mild-to-moderate stage of Alzheimer's Disease
4. Donepezil transdermal system (marketed under the brand name Adlarity® by Corium)
  - a. Approved in 2022, branded transdermal patch
  - b. Acetylcholinesterase inhibitor drug class, once-weekly transdermal system
  - c. Indicated for mild-to-moderate and moderate-to-severe stages of Alzheimer's Disease

The FDA recently approved Aducanumab (marketed under the branded name Adulhelm® by Biogen) and lecanemab (marketed under the branded name Leqembi® by Eisai) for mild-to-moderate Alzheimer's Disease. Adulhelm was the first disease modifying treatment (DMT), but due to several issues associated with the drug, including CMS restricting coverage, it is not easily accessible and will only be covered for qualified clinical trial patients. Leqembi® is indicated for the treatment of Alzheimer's Disease. It is expected that coverage and utilization may be better for Leqembi® than Adulhelm®, but this will only be apparent after several quarters of commercialization.

Approved in 2022 was Adlarity® (donepezil transdermal system), by the marker Corium. It is a once-weekly patch formulation of donepezil for the treatment of dementia due to mild, moderate, or severe Alzheimer's Disease. The Company believes Adlarity® would likely be ALPHA-1062's primary branded competitor. The real unmet need in the marketplace exists for a symptomatic treatment that has a better tolerability profile. The Adlarity® label has its disadvantages as it relates to its' tolerability profile. The Company believes that Adlarity®'s profile has exchanged gastrointestinal side effects for skin irritation issues and headache, which may not be tolerated well by this patient population. Notable adverse reactions in their label are skin irritations 81%, headache 15%, and insomnia 7%. The Company also believes Adlarity®'s tolerability profile and transdermal delivery system is not ideal for elderly patients, as their fragile skin is sensitive and susceptible to tears and abrasions. The Alzheimer's Disease community has learned this firsthand with rivastigmine (Exelon patch). 72% of caregivers noted the rivastigmine patch causes skin irritations issues for their loved one. With this feedback, we believe the oral delivery of ALPHA-1062 will be more convenient and a better option for these patients. Additionally, Adlarity® storage, application and removal process may be burdensome to elderly patients and caregivers. Adlarity® must be stored in a refrigerator until use, warm up to room temperature prior to use, can not be applied to the same body location within 14 days and cannot be exposed to excess heat, such as a heating pad. The Company predicts these storage and usage requirements will be seen as inconvenient and coupled with the adverse reactions, will limit market share attainment of this product.

Alzheimer's Disease is a highly genericized market with limited drug development innovation. As noted above, three out of the four approved symptomatic medications are generic and many have been in the market up to two decades. The acetylcholinesterase inhibitors drug class (ie: donepezil 70% market share, rivastigmine 4.86% market share, and galantamine 2.27% market share) are largely prescribed, with approximately 80% of the total Rx market share. N-methyl-D (NMDA) receptor agonists (memantine and branded Namzaric®) are indicated for moderate-to-severe Alzheimer's Disease and as such are used in later stages, and as combination therapy with acetylcholinesterase inhibitors. Due to the perceived limited efficacy and side effects of the acetylcholinesterase inhibitor medications, patients are often taking multiple therapies, ultimately increasing their drug burden. ~60% of patients are on combination therapy in hopes of increasing efficacy outcomes and mitigating side effects. Of note, 55% of patients progress to second line therapy, and 60% will

progress further to a third line therapy. This further illustrates the unmet needs of current treatment options, but also the patient's willingness to keep trying medication until something works.

The perceived limited efficacy or not enough efficacy improvement, and tolerability side effects, including gastrointestinal issues (nausea, diarrhea, and vomiting), dizziness and insomnia, cause a substantial rate of treatment discontinuation. Some data and studies suggest that patients on acetylcholinesterase inhibitor medications, will discontinue treatment approximately 30% of the time within 4 months and 55% discontinue therapy within 12 months. Gastrointestinal issues are cited as a leading reason for discontinuing treatment, as reported in both physicians and caregiver market research. The high rates of gastrointestinal adverse effects are also included in the prescribing information for each approved drug. The most common adverse events that are reported to lead to discontinuation of therapy were diarrhea, nausea, vomiting, dizziness and decreased appetite among acetylcholinesterase inhibitors. Prescribing habits within specialty physicians and long-term care physicians seem to be well entrenched, and overall, physicians report feeling dissatisfied and/or apathetic about their symptomatic treatment options. Caregivers also express dissatisfaction with the currently approved symptomatic treatments options.

### Acetylcholinesterase Inhibitors

As mentioned, acetylcholinesterase inhibitors are the dominant symptomatic drug class, which inhibit cholinesterase and prevent the breakdown of acetylcholine in the brain. They account for approximately 80% of all Alzheimer's Disease drug prescriptions, which equates to 11 million prescriptions each year and \$5B in sales dollars (assuming branded priced market). The use of acetylcholinesterase inhibitors as the go-to medication is forecasted to remain consistent well into the future. Donepezil is the staple acetylcholinesterase inhibitor, with approximately 70% total market share.

Yet, according to the market research, physicians believe donepezil has reported little clinical improvement and a less than desirable tolerability profile. So, their treatment choice to prescribe it is based on secondary attributes: longevity in the market, low generic cost and once-daily dosing. Physicians and caregivers report 56-78% of the time donepezil tolerability issues are the primary reason for discontinuation. Caregivers perceive these side effects diminish their loved one's quality of life in terms of comfort, eating, and ability for independent toileting. In addition to gastrointestinal issues, long-term care physicians in particular note that nausea and loss of appetite are troublesome side effects because it affects the patient's ability to socialize, disrupts mealtimes and causes family complaints. Additionally, the gastrointestinal issues cause staff burden due to the risk of falls as the patient tries to rush to a bathroom. Physicians and caregivers cite that approximately 40% of the time perceived limited efficacy results or not enough efficacy improvement is the second reason patients discontinue therapy. Increasingly worrisome, as noted in research, is that over half of patients that discontinue donepezil within long-term care homes are not prescribed another Alzheimer's Disease medication. This could result in a patient's disease progressing at a rapid pace without any treatment assistance. Another limitation of the acetylcholinesterase inhibitors is the long titration schedule (4-6 weeks) to reach the maximum efficacious dose. Needless to say, improved efficacy outcomes, a shorter titration schedule and a better tolerability profile are significant unmet needs for future Alzheimer's Disease treatments.

### Forecasted Alzheimer's Disease Treatments

More than 126 drugs are currently in various stages of development for Alzheimer's Disease and the treatments range from symptomatic, disease modifying, and behavioral. Despite the forecasted launches of DMTs, assuming clinical success and FDA approval, symptomatic therapies (specifically acetylcholinesterase inhibitors) will still be a dominant therapy and maintain the largest Rx share in an Alzheimer's Disease patient's treatment algorithm. Symptomatic therapies and DMTs, are projected to be used in combination to maximize efficacy and symptom control for Alzheimer's Disease patients.

There are currently 74 Alzheimer's Disease treatments in phase 2 clinical trials and 28 treatments in Phase 3, a number of which are projected to be approved for mild-to-moderate stages of Alzheimer's Disease. Eli Lilly's solanezumab, Merck's verusbecestat, and Taurz therapeutics LMTX. If approved and commercialized, these disease modifying treatments are projected to increase the rates of Alzheimer's Disease diagnosis and treatment. While there should be much anticipation for their potential approvals, the regrettable circumstances surrounding the real-world obstacles that Biogen faced with the approval of Aduhelm® have caused the

Alzheimer's Disease community to be apprehensive. Physicians are skeptical about disease modifying treatment usage due to the lack of available information to date, the anticipated cost and reimbursement challenges, and concerns about their real-world efficacy results.

Within the behavioral drug category, four therapies targeting key neuropsychiatric symptoms are expected in the coming years and will expand the Alzheimer's Disease treatment market. Expected launches include Avanir/Otsuka's AVP-786 (agitation with Alzheimer's dementia), and Axsome's AXS-05 (agitation with Alzheimer's dementia). According to Key Opinion Leaders and market research, these treatments would likely be used in combination with indicated symptomatic treatments, such as ALPHA-1062, in Alzheimer's Disease patients experiencing neuropsychiatric symptoms. We also believe that the approval of these medications will likely increase Alzheimer's Disease diagnosis and treatment rates, which is positive for potential ALPHA-1062 Alzheimer's Disease patients.

#### ALPHA-1062 Manufacturing

With respect to the manufacturing of ALPHA-1062, the Company has entered into agreements with specialized contract manufacturing organizations located in Taiwan for the manufacturing of the ALPHA-1062 active pharmaceutical ingredient, and with manufacturing companies located in the United States specialized in the production of oral tablets and nasal spray formulations. As the development program proceeds, the Company intends to contract with back-up active pharmaceutical ingredient and contract manufacturing organizations, ensuring a reduced risk of disruption in the supply of the product on commercialization. The Company expects that this strategy will help reduce the operational risk.

#### ALPHA-1062 Regulatory Matters

The Company has entered into contracts with regulatory consultants to provide advice and assist in preparing documentation for regulatory submissions to the FDA. The Company also plans to contract with appropriate regulatory consultants focused on the European Medicines Agency (EMA) of the European Union.

The Company intends to develop a detailed commercialization plan which is subject to the receipt of FDA approval for ALPHA-1062, in the United States. The Company also intends to identify pharmaceutical distribution partners to enter the markets in Asia, European Union, and/or LATAM (Mexico, Central and South America).

#### ALPHA-0602

The ALPHA-0602 product candidate originated almost a decade ago when researchers at McGill University in Montreal discovered that a protein called Progranulin seemed to show activity for several neurological disorders. Progranulin is a large protein that was found to be present in virtually all living animals and appears to be used by the body for multiple tasks. Upon further investigation, scientists discovered that the large molecule was made of smaller polypeptides or subunits, referred to as Granulin Epithelin Modules or GEMs.

ALS is a progressive neurodegenerative disease that affects nerve cells in the brain and spinal cord that carry messages from the brain to the muscles (Source: Laird et al. (2010), Chitramuthu et al. (2017)) A safe and effective treatment for ALS remains an unmet medical need. The few treatment options that currently exist for ALS patients, have shown limited effectiveness. ALPHA-0602 is being developed for the treatment of ALS and has been granted Orphan Designation by the FDA.

During the second quarter of 2022 the Company received Rare Pediatric Designation for ALPHA-0602 for treatment of spinal muscular atrophy. This designation allows for priority review.

#### ALPHA-0602, ALPHA-0702 and ALPHA-0802 Pre-Clinical Development

ALPHA-0602 has been investigated in preclinical studies designed to stimulate the overproduction of progranulin in validated animal models of neurological disorders, specifically ALS. Initial work with animal models of ALS has been completed indicating that Progranulin may be effective in modifying the disease

process. Additional in-vitro and in-vivo investigations to validate the effectiveness of Progranulin and the potential of the GEMs are ongoing.

In March 2022 the Company announced positive preclinical data from its ALPHA-0602 ALS gene therapy program. These data underscore the robust preclinical evidence supporting the Company's gene therapy approach to treating ALS and highlight the Company's strategy to validate these data in planned clinical trials.

Highlights of the positive proof of concept pre-clinical results demonstrated with ALPHA-0602 in vitro in motor neurons and in vivo in models of ALS, include:

- ALPHA-0602 demonstrated abundant PGRN expression in motor neurons, suggesting a neurotrophic role for PGRN. ALPHA-0602 further increased PGRN levels and decreased motor neuron cell death in in vitro models.
- Using an in vivo model of ALS to further assess the neurotrophic effects of PGRN, ALPHA-0602 reversed the motor neuron toxicity resulting from both decreased levels of TDP-43 and FUS, and the expression of ALS related toxic forms of these proteins.
- In an ALS transgenic mouse model caused by a toxic form of TDP-43, ALPHA-0602 administered via adeno-associated virus, resulted in successful viral transduction of central nervous system cells and substantially increased cerebrospinal fluid (CSF) levels of PGRN.
- ALPHA-0602 treated TDP-43 transgenic mice persistently gained weight throughout the 10-week study, in contrast to untreated transgenic animals who failed to gain weight. Continued weight gain in the face of a significant and sustained toxic insult, is suggestive of a therapeutic benefit of ALPHA-0602 expression.

In June 2022, the Company announced the discovery of two GEM combinations, ALPHA-0702 and ALPHA-0802, and positive preclinical data from each candidate therapy. ALPHA-0702 and ALPHA-0802 are Granulin Epithelin Motifs, or GEMs, derived from full length progranulin (PGRN) which have therapeutic potential across multiple neurodegenerative diseases. GEMs have been shown to be important in regulating cell growth, survival, repair, and inflammation. ALPHA-0702 and ALPHA-0802 have demonstrated robust results in a recent preclinical study, leading the Company to believe in the future potential of this platform to develop therapeutics to treat a wide array of diseases. These data underscore robust preclinical evidence supporting the Company's approach to treating neurodegenerative disease and highlight the Company's strategy to validate these data in additional pre-clinical studies. The Company has paused further development with GEM's and ALPHA-0602 in order to focus all resources toward ALPHA-1062 clinical and regulatory development.

Highlights of the positive proof of concept pre-clinical results demonstrated with ALPHA-0702, ALPHA-0802, and ALPHA-0602 include:

- ALPHA-0702 and ALPHA-0802 maintained prolonged cell survival and neuronal morphology, with a potency equivalent to, or approaching full length progranulin.
- ALPHA-0702 and ALPHA-0802 reduced both mutant and wild type TDP-43 toxicity, with a potency equivalent to, or approaching full length progranulin.
- ALPHA-0602, and both ALPHA-0702 and ALPHA-0802 enhanced Cathepsin D maturation suggestive of improved lysosomal function. These effects were seen in induced pluripotent stem cells, derived from patients harboring toxic TDP-43 mutations, that were terminally differentiated into motor neurons. Both therapeutic candidates have the potential to be as effective as full-length progranulin in promoting Cathepsin D maturation, where under conditions of neuronal stress (FTD models) progranulin has been shown to be inappropriately processed.
- Future studies will seek to confirm reduced neuroinflammation and toxicity associated with ALPHA compounds.

#### ALPHA-0602 Regulatory Development

The in-vitro and preclinical program to select the lead biological drug candidates was completed in Q2 2022, with final confirmatory activity completed in Q3 2022. The Company will look to meet with community experts in the development of a toxicology program and an appropriate in vivo disease model to provide proof of

efficacy. Following this the Company intends to seek FDA guidance regarding, relevant pre-clinical safety studies to be initiated in animal models consistent with FDA requirements to support an Investigational New Drug Application. The lead drug candidate would follow a conventional Biologics License Application (“BLA”) approval process requiring Phase I – III clinical trials to support the use of progranulin for use in treating ALS.

In February 2020, ALPHA-0602 was granted Orphan Drug Designation by the FDA for the use of ALPHA-0602 in the treatment of ALS. The Orphan Drug Designation has several significant benefits including:

- (1) tax credits of 50% off the clinical drug testing cost awarded upon approval;
- (2) eligibility for market exclusivity for seven years post approval; and
- (3) waiver of NDA and biologics license application fees, which could amount to up to US\$3,200,000.

The Company has received Rare pediatric designation for ALPHA-0602 for treatment of spinal muscular atrophy. This voucher could be either redeemed by the sponsor of the rare pediatric disease designated product to expedite the review of subsequent NDA or BLA, or sold to another sponsor for use in the same manner.

### **Current Year Summary**

On January 16, 2023, the Company repriced 4,655,000 stock options with exercise prices ranging from CAD\$0.64 to CAD\$1.05. The new options have an exercise price of CAD\$0.28 per share and vest in monthly installments over either an 8 month, 18 month or 24 month term.

On March 6, 2023, the Company closed the Q1 2023 PP as described above under the heading “Capital Raised Q1 2023”.

On March 6, 2023, the Company and NLS agreed to an amendment to the promissory note pursuant to which the interest rate was increased from 2% to 5.5% and the maturity date was extended from December 31, 2022 to July 15, 2024. The amended agreement is effective March 1, 2023 and requires monthly interest only payments until maturity. In addition, the amendment now incorporates both Alpha Cognition, Inc. and Alpha Cognition Canada, Inc. under the Memogain Technology License Agreement and added clarity to certain terms and definitions under the license agreement.

As of May 1, 2023, the Company’s common shares commenced trading on the Canadian Securities Exchange (“CSE”) under the symbol “ACOG”, previously the Company’s shares were traded on the TSX Venture Exchange (“TSX-V”) until April 28, 2023 when the Company had them delisted. The symbols “ACOG” and “ACOG.WT” remained unchanged.

On May 1, 2023, the Company issued 1,050,000 Common shares in relation to the exercise of 1,050,000 ACI Canada legacy performance options with an exercise price of \$0.01 for total proceeds of \$10,500.

In June 2023, the Company granted 16,190,000 Common Share options with an exercise price of CAD\$0.22 per share to certain employees of ACI USA and certain directors of the Company. The options will be subject to the following vesting terms: 12.5% will vest on June 8, 2023 and the remaining 87.5% will vest in equal monthly instalments until January 30, 2026.

On May 30 2023, the Company announced a best efforts private placement offering of up to US\$6,500,000 of units at the initial pricing of US\$0.22 per unit (the “Q2 2023 PP”). Each unit consists of one common share and one-half of a warrant. Each whole warrant will entitle the holder to purchase an additional common share of the Company at the initial pricing of US\$0.31 per share for a period of three years from the closing date. The aggregate proceeds may be increased by 30% to accommodate any over-allotment. The Company also announced that it entered into an Investment Banking Agreement (“IBA”) with Spartan, pursuant to which Spartan will act as agent on a best efforts basis in connection with the Q2 2023 PP. In accordance with the Q2 2023 PP, the Company has agreed to pay Spartan cash commissions of 10% of the gross proceeds, issue Spartan finder’s warrants equal to 10% of the number of the warrants issued to investors, in each case excluding investors on the Company’s president’s list, and pay Spartan a non-accountable expense fee equal to 5% of the gross proceeds of the Q2 2023 PP excluding the president’s list.

The Company expects to use the net proceeds from the Offering for research and development, general and administrative matters, and working capital.

As at the date of this report, no proceeds have been received for the Q2 2023 PP.

The Company has also agreed to enter into an ongoing consulting services agreement for a three year term with Spartan. The services will include advising and assisting on potential business development transactions, strategic introductions, assisting management with enhancing corporate and shareholder value, and capital raising advice. The Company will pay Spartan a consulting fee in the aggregate amount of \$480,000, payable in three equal installments with each installment being subject to the Company achieving certain business development and capital raising objectives. Spartan will also be entitled to earn and receive additional common shares of the Company such that Spartan will hold 10.6% of the outstanding common shares of the Company determined as at the closing of the offering, inclusive of the 2,129,566 common shares currently held by Spartan. The additional common shares will be issued to Spartan on a rolling basis upon completion of predetermined business development objectives including the closing of certain offering amounts and the completion of material business transactions.

On June 5, 2023, the Company was awarded a \$750,000 research and development grant from the Army Medical Research and Materiel Command for a pre-clinical study on the use of the ALPHA-1062 Intranasal to reduce blast mTBI (mild Traumatic Brain Injury) induced functional deficit and brain abnormalities. The study grant is issued in collaboration with the Seattle Institute of Biomedical and Clinical Research and is endorsed by the Department of Defense. The study is expected to commence in Q4 2023 and continue for a 16 month period. No funds have been received from the grant as of the date of these financial statements.

### **Subsequent Events**

On July 7, 2023, the Company entered into a loan agreement with Alpha Seven Therapeutics, Inc., a newly formed corporation in which the Company will initially own 47.5% of the common stock and another 15% by certain management of the Company, to advance an amount up to \$150,000. The outstanding balance will have an interest rate of 12% per annum and a term of 12 months of July 7, 2024

## **CRITICAL JUDGEMENTS AND ESTIMATES**

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The preparation of the condensed interim consolidated financial statements in conformity with IFRS requires management to make certain estimates, judgments and assumptions that affect the reported amounts of assets and liabilities at the date of the consolidated financial statements and the reported revenues and expenses during the period. Although management uses historical experience and its best knowledge of the amount, events or actions to form the basis for judgments and estimates, actual results may differ from these estimates. Significant estimates and judgements made by management in the preparation of these consolidated financial statements are outlined below.

### **Functional currency**

Management is required to assess the functional currency of each entity of the Company. In concluding on the functional currencies of the parent and its subsidiaries, management considered the currency that mainly influences the sale prices of goods and services and the cost of providing goods and services in each jurisdiction in which the Company operates. When no single currency was clearly dominant, the Company also considered secondary indicators including the currency in which funds from financing activities are denominated and the currency in which funds are retained.

### **Income taxes**

In assessing the probability of realizing income tax assets, management makes estimates related to expectation of future taxable income, applicable tax opportunities, expected timing of reversals of existing temporary differences and the likelihood that tax positions taken will be sustained upon examination by applicable tax authorities. In making its assessments, management gives additional weight to positive and negative evidence that can be objectively verified.



Going concern

The assessment of the Company's ability to continue as a going concern involves management judgement about the Company's resources and future prospects.

Impairment of intangible assets

The application of the Company's accounting policy for intangible assets requires judgment in determining whether it is likely that future economic benefits will flow to the Company and whether any impairment indicators exist, which may be based on assumptions about future events or circumstances. Estimates and assumptions may change if new information becomes available. If, after expenditures are capitalized, information becomes available suggesting that the recovery of expenditures is unlikely, the amount capitalized is written off in profit or loss in the period the new information becomes available.

Useful lives of intangible assets

Amortization is recorded on a straight-line basis based upon management's estimate of the useful life and residual value. The estimates are reviewed at least annually and are updated if expectations change as a result of technical obsolescence or legal and other limits to use.

Share-based payment transactions and valuation of derivative liability

The Company uses the Black-Scholes Option Pricing Model to determine the fair value of stock options, standalone share purchase warrants issued, bonus rights and derivative liability. This model requires the input of subjective assumptions including expected share price volatility, interest rate, and forfeiture rate. Changes in the input assumptions can materially affect the fair value estimate and the Company's earnings (loss) and equity reserves.

Valuation of bonus rights

The Company uses the Black-Scholes Option Pricing Model to determine the fair value of the bonus rights. This model requires the input of subjective assumptions including expected share price volatility, interest rate, and forfeiture rate. Additionally, the Company applies a probability of the likelihood of certain thresholds being met. Changes in the input assumptions can materially affect the fair value estimate and the Company's earnings (loss) and equity reserves.

Valuation of debt modification

The Company calculated the debt modification using the net present value of cash flows approach. This approach requires the input of subjective assumptions including the Company's borrowing rate. Changes in the input assumptions can materially affect the fair value estimate and the Company's earnings (loss).

**SELECTED QUARTERLY INFORMATION**

The following financial data is derived from the Company's unaudited condensed interim consolidated financial statements for the three and six months ended June 30, 2023 and 2022.

	Three months ended		Six months ended	
	June 30,		June 30,	
	2023	2022	2023	2022
	\$	\$	\$	\$
Operating expenses	(2,752,599)	(4,417,993)	(4,756,539)	(7,360,315)
Other income (expenses)	(38,155)	1,414,160	104,313	1,443,158
Net loss	(2,790,754)	(3,003,833)	(4,652,226)	(5,917,157)
Currency translation adjustment	27,898	(376,526)	(8,341)	(176,449)
Comprehensive loss	(2,762,856)	(3,380,359)	(4,660,567)	(6,093,606)
Basic and diluted loss per common share	(0.03)	(0.05)	(0.05)	(0.09)
Working capital	326,558	4,169,557	326,558	4,169,557
Total assets	1,915,677	6,840,674	1,915,677	6,840,674
Total long-term liabilities	1,373,347	675,983	1,373,347	675,983

**RESULTS OF OPERATIONS – Three months Ended June 30, 2023**

During the three months ended June 30, 2023, the Company's primary focus was on the continued development and NDA file preparations of ALPHA-1062 in AD.

During the three months ended June 30, 2023, operating expenses decreased by \$1,665,394 from \$4,417,993 for the quarter ended June 30, 2022 to \$2,752,599 for the quarter ended June 30, 2023 primarily as a result of:

Operating Expense	Increase / Decrease in Expenses	Explanation for Change
Professional fees	Decrease of \$132,918	Decreased due to lower accounting and audit fees incurred and overall reduction in corporate activity.
Research and development	Decrease of \$1,709,724	Decreased due to the Company reducing overall research and development costs primarily related to clinical trial costs related to ALPHA-1062 in AD, as related clinical activities were substantially completed during 2022.
Share-based compensation	Increase of \$385,462	Increased due to additional stock options granted in June 2023 that are subject to graded vesting.

The following occurred during the three months ended June 30, 2023 as compared to the three months ended June 30, 2022:

- The Company recorded a decrease in the gain of the derivative liability of \$1,338,635 on the revaluation of the derivative liability relating to the warrants with an exercise price in USD.

**RESULTS OF OPERATIONS – Six Months Ended June 30, 2023**

During the six months ended June 30, 2023, the Company's primary focus was on the continued development and NDA file preparations of ALPHA-1062 in AD.

For the six months ended June 30, 2023, operating expenses decreased by \$2,603,776 from \$7,360,315 in the six months ended June 30, 2022 to \$4,756,539 in the six months ended June 30, 2022 primarily as a result of:

<b>Operating Expense</b>	<b>Increase / Decrease in Expenses</b>	<b>Explanation for Change</b>
Investor relations	Decrease of \$124,913	Decreased due to reduction in services needed by investor relations firms in the current period.
Research and development	Decrease of \$2,371,362	Decreased due to the Company reducing overall research and development costs primarily related to clinical trial costs related to ALPHA-1062 in AD, as related clinical activities were substantially completed during 2022.
Share-based compensation	Increase of \$210,280	Increased due to additional stock options granted in June 2023 that are subject to graded vesting.
Subcontractors	Decrease of \$179,149	Decreased due to a reduction of the use of subcontractors from the prior year.

The following occurred during the six months ended June 30, 2023 as compared to the six months ended June 30, 2022:

- The Company recorded a gain on derivative liability of \$1,370,108 on the revaluation of the derivative liability relating to the warrants with an exercise price in USD.
- The Company recorded a gain on debt modification of \$108,907 in relation to the change in terms with the promissory note in March 2023.

**SUMMARY OF QUARTERLY RESULTS FOR THE LAST CONSECUTIVE EIGHT QUARTERS**

The following table presents the unaudited summarized financial information for the last eight quarters:

	<b>Q2 2023</b>	<b>Q1 2023</b>	<b>Q4 2022</b>	<b>Q3 2022</b>
	\$	\$	\$	\$
Operating expenses	(2,752,599)	(2,003,940)	(3,420,717)	(2,857,472)
Other income (expenses)	(38,155)	142,468	(696,114)	782,268
Loss for the period	(2,790,754)	(1,861,472)	(4,116,831)	(2,075,204)
Currency translation adjustment	27,898	(36,239)	873,874	(680,619)
Comprehensive loss for the period	(2,762,856)	(1,897,711)	(3,242,957)	(2,755,823)
Loss per share	(0.03)	(0.02)	(0.05)	(0.04)
Weighted average shares	94,604,510	77,849,023	68,023,450	68,023,450

	<b>Q2 2022</b>	<b>Q1 2022</b>	<b>Q4 2021</b>	<b>Q3 2021</b>
	\$	\$	\$	\$
Operating expenses	(4,417,993)	(2,942,322)	(4,253,019)	(3,119,960)
Other income (expenses)	1,414,160	28,998	1,103,331	(1,169,093)
Income (loss) for the period	(3,003,833)	(2,913,324)	(3,149,688)	(4,289,053)
Currency translation adjustment	(376,526)	200,007	(46,738)	(60,508)
Comprehensive income (loss) for the period	(3,380,359)	(2,713,247)	(3,221,255)	(4,349,561)
Loss per share	(0.05)	(0.04)	(0.05)	(0.08)
Weighted average shares	68,023,450	67,815,580	65,016,609	51,843,927

The variations in net loss from quarter to quarter are a result of the extent of the amount of administrative expenses needed, the amount of activity the Company is incurring on the research and development of ALPHA-1062 and ALPHA-0602, and the amount of net change in the derivative liability.

The following one-time events also occurred:

- Q2 2022 included a gain on the revaluation of the derivative liability of \$1,266,779;
- Q4 2021 included a loss on the revaluation of derivative liability of \$1,106,143;
- Q3 2021 included a loss on the revaluation of derivative liability of \$1,179,404; and

**LIQUIDITY AND CAPITAL RESOURCES**

The Company has not generated revenues from its operations to date and as at June 30, 2023, had a deficit of \$54,345,414 (December 31, 2022 - \$49,986,851) which has been primarily financed by equity. The Company had \$1,217,771 in cash and \$1,012,849 in current liabilities as of June 30, 2023. The Company's continuing operations, as intended, are highly dependent upon its ability to obtain additional funding and generate cash flows. Management is of the opinion that it does not have sufficient working capital to meet the Company's liabilities and commitments as outlined and planned in the following discussion. Management recognizes it will need to raise additional financing, primarily expected from the active private placement memorandum Offering, in addition the Q1 2023 PP financing the Company completed in March 2023, to cover upcoming planned NDA filing, development and operating costs. Possible sources of such capital may come from private placements and public offerings of the Company's common shares and funds received from the exercise of warrants and share options, the Company will also consider funding that may arise through partnerships activities and debt. There is a risk that additional financing will not be available on a timely basis, on terms acceptable, or at all to the Company. These factors indicate the existence of a material uncertainty which causes significant doubt in the ability of the Company to continue as a going concern.

Since the third quarter of 2022 the Company has initiated cost cutting measures to extend its cash runway and reduce ongoing cash burn. The Company streamlined R&D programs and has prioritized spend towards the New Drug Application (“NDA”) filing and development of ALPHA-1062 in AD. The Company has reduced headcount and other operating costs related to the ALPHA-1062 NDA file and other development costs. The Company has lowered its near term operating burn until additional capital can be secured. If we are unable to raise adequate funds, we may have to further delay or reduce the scope of or eliminate some or all of our current research and development. Any of these actions could have a material adverse effect on our business, results of operations or financial condition.

The table below sets forth a summary of cash flow activity and should be read in conjunction with the Company's cash flow statements included in the Interim Financial Statements:

	<b>Six months ended</b>	
	<b>2023</b>	<b>June 30, 2022</b>
	<b>\$</b>	<b>\$</b>
Cash flows used in operating activities	(5,128,257)	(5,155,102)
Cash flows (used in) provided by investing activities	-	(4,876)
Cash flows provided by financing activities	4,270,673	28,785
Effect of foreign exchange on cash	(8,341)	(195,143)
Decrease in cash during the period	(865,925)	(5,326,336)
Cash, beginning of period	2,083,696	11,301,793
Cash, end of period	1,217,771	5,975,457

The cash flows used in operating activities decreased by \$26,845 for the six months ended June 30, 2023 compared to the comparative period. The decrease in cash flows from operating activities represents the effect on cash flows from net losses adjusted for items not affecting cash, principally: accrued interest expenses, accretion expense, amortization and depreciation, share-based compensation, and changes in the value of derivatives, in addition to net changes in non-cash balances relating to operations.

Cash provided by financing activities for the six months ended June 30, 2023 increased by \$4,242,000 compared to the comparative period. During the six months ended June 30, 2023, financing activities included raising \$4,297,369 from the issuance of units, net of share issue costs of \$208,686.

#### **OFF BALANCE SHEET ARRANGEMENTS**

The Company did not have any off-balance sheet arrangements as at June 30, 2023 or the date of this report.

## COMMITMENTS

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### 1) ALPHA-1062 Technology

In March 2015, the Company entered into the Memogain Technology License Agreement (“License Agreement”) with NLS for the exclusive right and license to further develop and exploit the Alpha 1062, formerly Memogain Technology. The License Agreement set out the consideration as follows:

- The Company assumed all of NLS’s obligations under the Memogain Asset Purchase Agreement which consisted of cumulative total payments to Galantos Pharma GmbH of €10,000,000, the cumulative total may be increased to €15,000,000 subject to certain provisions, which is to be paid as follows (collectively the “Galantos Royalty Payments”):
  - 3% of the net sales revenue received by the Company from the sale of any products relating to the ALPHA-1062 Technology;
  - 10% of any sublicensing revenue; and
  - 25% of an upfront payment or milestone payment paid by a sub-licensee to the Company;
- Upon completion of the Galantos Royalty Payments, a royalty payment to NLS of 1% of the revenue received from the ALPHA-1062 Technology by the Company over \$100 million per annum and
- The issuance of a promissory note of \$1,400,000 to NLS.

On January 1, 2016, the Company assumed NLS’s obligations under a Royalty Agreement with Galantos Consulting dated August 31, 2013, which consisted of cumulative total payments to Galantos Consulting of €2,000,000, the cumulative total may be increased to €3,000,000 subject to certain provisions, which is to be paid as follows:

- 1% of the net sales revenue received by the Company from the sale of any products relating to the ALPHA-1062 Technology;
- 2% of any sublicensing revenue; and
- 2% of an upfront payment or milestone payment paid by a sub-licensee to the Company.

On March 6, 2023, the Company and NLS agreed to amend the License Agreement to now incorporate both Alpha Cognition Inc. and Alpha Cognition Canada Inc. under the License Agreement and added clarity to certain terms and definitions in the License Agreement.

### 2) ALPHA-0602 Technology

In November 2020, the Company entered into a license agreement with NLS for the world-wide exclusive right to the Progranulin (“ALPHA-602”) Technology. In accordance with the agreement, the Company will pay the following:

- \$50,000 to NLS before January 15, 2021 (paid);
- a royalty of 1.5% of the commercial sales, capped at \$2,000,000, to NLS;
- 10% of any Upfront Payments in excess of \$2,000,000.

The total amount payable to NLS under this agreement shall not exceed \$2,000,000.

## CONTINGENCIES

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The Company did not have any contingencies as at June 30, 2023 or the date of this report.

## TRANSACTIONS WITH RELATED PARTIES

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Key management personnel are those persons having authority and responsibility for planning, directing and controlling the activities of the Company, directly or indirectly. Key management personnel include the Company's executive officers and members of its Board of Directors.

In September 2018, the Company signed a management agreement with CMI Cornerstone Management Corp. ("CMI"), a company controlled by Ken Cawkell, the former CEO and a director of the Company, which requires monthly payments of \$15,000. In June 2019, the Company amended the agreement to increase the monthly fees to \$18,000. Included in the agreement is a provision for a termination payment equal to the greater of (i) \$432,000 less any fees previously paid under the agreement between June 1, 2019 and the date of termination or (ii) \$54,000. On September 1, 2022, the Company amended the agreement to decrease the monthly fees to \$9,000. On April 30, 2023, the Company amended the agreement to an hourly fee of \$400 for services rendered and accrued \$54,000 for the termination fee.

In September 2018, the Company signed a management agreement with 9177 – 586 Quebec Inc., later assigned to 102388 P.E.I. Inc. ("PEI Inc."), companies controlled by Denis Kay, the Chief Scientific Officer of the Company, which requires monthly payments of \$13,333 per month for an effective term of two years. In June 2019, the Company amended the agreement to increase the monthly fees to \$15,000. Included in the agreement is a provision for a termination payment equal to the greater of (i) \$360,000 less any fees previously paid under the agreement between June 1, 2019 and the date of termination or (ii) \$45,000. On August 15, 2022, the Company amended the agreement to decrease the monthly fees to \$7,500.

In August 2020, the Company signed a management agreement with Seatrend Strategy Group, ("Seatrend"), a company controlled by Jeremy Wright, the former CFO of the Company, which requires monthly payments of \$6,000. In October 2020, the Company amended the agreement to increase the monthly fees to \$15,000. Included in the agreement is a provision for a termination payment of six's month's fees. On April 12, 2022, Jeremy Wright resigned as the CFO of the Company and was paid a termination payment of \$90,000.

In February 2021, the Company signed a consulting agreement with Michael McFadden, the CEO of the Company, requiring an annual base compensation of \$500,000. A new employment agreement was signed in March 2022 which included in the agreement is a provision for termination payment without just cause of:

- a) Severance payments for a period of twelve months with the following terms:
  - i) Months 1 through 6: 100% of annual base salary;
  - ii) Months 7 through 9: 50% of annual base salary; and
  - iii) Months 10 through 12: 25% of annual base salary.
- b) Bonus severance equal to the average of bonuses paid of the two most recent full fiscal years prior to termination plus the bonus that would have been paid in the fiscal year of termination.

Also included in the agreement is a provision for termination payment due to a change of control, the CEO will receive:

- a) a cash payment equal to the annual base salary;
- b) a full bonus payable in cash immediately, irrespective of whether targets have been met; and
- c) continuation of healthcare benefits for twelve months from date of change of control event.

In April 2022, Mr. McFadden was granted the ability to earn up to 8,195,740 bonus rights of which 1,639,148 bonus rights had been earned at June 30, 2023.

In May 2021, the Company hired Lauren D'Angelo, the Chief Commercial Officer ("CCO") of the Company, requiring an annual base compensation which is currently \$420,000. Included in the agreement is a provision for termination payment due to a change of control, the CCO will receive:

- a) a cash payment equal to the annual base salary;
- b) a full bonus payable in cash immediately, irrespective of whether targets have been met; and
- c) continuation of healthcare benefits for twelve months from date of change of control event.

In May 2022, Ms. D'Angelo was granted the ability to earn up to 1,065,446 bonus rights of which 737,616 bonus rights had been earned at June 30, 2023.

In November 2021, the Company signed an employment agreement with Cedric O’Gorman, the Chief Medical Officer (“CMO”) of the Company, requiring an annual base compensation of \$400,000. Included in the agreement is a provision for a termination payment without just cause of an amount equal to annual base compensation for a period of six months. If termination is due to a change of control, the CMO will receive:

- a) a cash payment equal to the annual base salary;
- b) a cash bonus equal to 50% of the annual base salary; and
- c) continuation of healthcare benefits for twelve months from date of change of control event.

On January 1, 2023, Cedric O’Gorman resigned as the Chief Medical Officer of the Company.

In April 2022, the Company signed an employment agreement with Donald Kalkofen, the Chief Financial Officer (“CFO”) of the Company, requiring an annual base compensation of \$420,000. Included in the agreement is a provision for termination payment due to a change of control, which if occurs, the CFO will receive:

- a cash payment equal to the annual base salary;
- a cash bonus equal to 50% of the annual base salary; and
- continuation of healthcare benefits for twelve months from date of change of control event.

During the six months ended June 30, 2023, the Company entered into the following transactions with related parties:

- a) Incurred management fees of \$56,810 (June 30, 2022 - \$108,413) and share-based compensation of \$197,497 (June 30, 2022 - \$nil) to CMI. As at June 30, 2023, \$54,000 (December 31, 2022 - \$54,000) was included in accounts payable and accrued liabilities owing to CMI.
- b) Incurred management fees of \$nil (June 30, 2022 - \$140,409) to Seatrend.
- c) Incurred management fees included in research and development of \$11,250 (June 30, 2022 - \$90,000) and share-based compensation included in research and development of \$9,877 (June 30, 2022 - \$11,035) to PEI Inc. As at June 30, 2023, \$7,500 (December 31, 2022 - \$41,250) was included in accounts payable and accrued liabilities owing to PEI Inc.
- d) Incurred share-based compensation of \$41,498 (June 30, 2022 - \$91,431) to Len Mertz, a director of the Company.
- e) Incurred share-based compensation of \$34,210 (June 30, 2022 - \$78,248) to John Havens, a director of the Company.
- f) Incurred share-based compensation of \$29,218 (June 30, 2022 - \$69,459) to Philip Mertz, a director of the Company.
- g) Incurred share-based compensation of \$29,218 (June 30, 2022 - \$69,459) to Rob Bakshi, a director of the Company.
- h) Incurred administrative fees of \$nil (June 30, 2022 - \$7,153), included in other general and administrative expenses, to Cawkell Brodie LLP, a law firm where Mr. Cawkell was a managing partner.
- i) Incurred other research and development expenses of \$nil (June 30, 2022 - \$9,000) and interest expense and accretion of \$63,913 (June 30, 2022 - \$64,891) to NLS, a company related by common director. As at June 30, 2023, \$nil (December 31, 2022 - \$11,001) was included in accounts payable and accrued liabilities owing to NLS and \$1,211,463 was owed for a promissory note.
- j) Incurred management fees and salaries of \$252,338 (June 30, 2022 - \$250,000) and share-based compensation of \$390,002 (June 30, 2022 - \$375,241) to Michael McFadden. As at June 30, 2023, \$118,415 (December 31, 2022 - \$218,846) was included in accounts payable and accrued liabilities and \$7,266 (December 31, 2022 - \$5,819) was included in other long-term liabilities to Mr. McFadden.



- k) Incurred management salaries included in research in development of \$200,471 (June 30, 2022 - \$179,415) and share-based compensation included in research and development of \$226,137 (June 30, 2022 - \$138,037) to Lauren D'Angelo, the Company's Chief Commercial Officer. As at June 30, 2023, \$90,344 (December 31, 2022 - \$150,151) was included in accounts payable and accrued liabilities and \$3,152 (December 31, 2022 - \$2,476) was included in other long-term liabilities owing to Ms. D'Angelo.
- l) Incurred management salaries included in research and development of \$8,333 (June 30, 2022 - \$200,000) and share-based compensation included in research and development of \$23,777 (June 30, 2022 - \$88,174) to Cedric O'Gorman, the Company's former Chief Medical Officer.
- m) Incurred management fees and salaries of \$210,000 (June 30, 2022 - \$95,455) and share-based compensation of \$231,969 (June 30, 2022 - \$48,094) to Don Kalkofen. As at June 30, 2023, \$84,055 (December 31, 2022 - \$155,114) was included in accounts payable and accrued liabilities owing to Mr. Kalkofen.

Summary of key management personnel compensation:

	For the six months ended	
	June 30,	
	2023	2022
	\$	\$
Other general and administrative	-	7,153
Other research and development	-	9,000
Management fees and salaries	519,148	594,277
Research and development - management fees and salaries	220,054	469,415
Share-based compensation	1,192,975	969,178
	<b>1,932,177</b>	<b>2,049,023</b>

These expenditures were measured by amounts agreed upon by the transacting parties.

## **FINANCIAL INSTRUMENTS AND RISK MANAGEMENT**

Financial instruments measured at fair value are classified into one of three levels in the fair value hierarchy according to the relative reliability of the inputs used to estimate the fair values. The three levels of the fair value hierarchy are:

- Level 1 – Unadjusted quoted prices in active markets for identical assets or liabilities;
- Level 2 – Inputs other than quoted prices that are observable for the asset or liability either directly or indirectly; and
- Level 3 – Unobservable inputs that are supported by little or no market activity, therefore requiring an entity to develop its own assumptions about the assumption that market participants would use in pricing.

The Company's financial instruments consist of cash, other current assets, accounts payable, bonus rights (presented in other long-term liabilities), derivative liability, and promissory note. The fair values of other current assets, accounts payable, and promissory note approximates their carrying values either due to their current nature or current market rates for similar instruments. Cash is measured at fair value on a recurring basis using level 1 inputs. Bonus rights and derivative liability are measured at fair value on a recurring basis using level 3 inputs. The continuity and valuation techniques that are used to determine the fair value of the other long-term liabilities and derivative liability are described in Notes 6 and 7 of the Interim Financial Statements.

The Company is exposed to a variety of financial risks by virtue of its activities including currency, credit, interest rate, and liquidity risk.

a) Currency risk

Foreign currency exchange rate risk is the risk that the fair value or future cash flows will fluctuate as a result of changes in foreign exchange rates. The Company's operations are carried out in Canada and the United States. As at June 30, 2023, the Company had net monetary assets of approximately \$400,000 denominated in Canadian dollars. These factors expose the Company to foreign currency exchange rate risk, which could have an adverse effect on the profitability of the Company. A 10% change in the exchange rate with the Canadian dollar would change net loss and comprehensive loss by approximately \$30,000. At this time, the Company currently does not have plans to enter into foreign currency future contracts to mitigate this risk, however it may do so in the future.

b) Credit risk

Credit risk is the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation.

The Company's cash is held in a large Canadian financial institution and a United States of America based financial institution. The Company maintains certain cash deposits with Schedule I financial institutions, which from time to time may exceed federally insured limits. The Company has not experienced any significant credit losses and believes it is not exposed to any significant credit risk. The Company's tax recoverable is due from the Government of Canada; therefore, the credit risk exposure is low. The Company's maximum credit risk is equal to the carrying value of cash and other current assets at June 30, 2023 and December 31, 2022.

c) Interest rate risk

Interest rate risk is the risk the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates. Financial assets and liabilities with variable interest rates expose the Company to interest rate cash flow risk. The Company does not hold any financial liabilities with variable interest rates. Financial assets and liabilities with fixed interest rates expose the Company to interest rate price risk. As at June 30, 2023, the promissory note bears interest of 5.5% per annum and is subject to interest rate price risk. The Company maintains bank accounts which earn interest at variable rates but it does not believe it is currently subject to any significant interest rate risk.

d) Liquidity risk

The Company's ability to continue as a going concern is dependent on management's ability to raise required funding through future equity issuances and through short-term borrowing. The Company manages its liquidity risk by forecasting cash flows from operations and anticipating any investing and financing activities. Management and the Board of Directors are actively involved in the review, planning and approval of significant expenditures and commitments. As at June 30, 2023, the Company had working capital of \$326,858.

Contractual undiscounted cash flow requirements for financial liabilities as at June 30, 2023 are as follows:

	≤1 Year	>1-3 Years	Total
	\$	\$	\$
Accounts payable	1,012,849	-	1,012,849
Promissory note	-	1,211,463	1,211,463
	1,012,849	1,211,463	2,224,312

## **OTHER RISKS AND UNCERTAINTIES**

The business and operations of the Company are subject to numerous risks, many of which are beyond the Company's control. The Company considers the risks set out below to be some of the most significant to potential investors in the Company, but not all of the risks are associated with an investment in securities of the Company. If any of these risks materialize into actual events or circumstances or other possible additional risks and uncertainties of which the Company is currently unaware or which it considers to be material in relation to the Company's business actually occur, the Company's assets, liabilities, financial condition, results of operations (including future results of operations), business and business prospects, are likely to be materially and adversely affected. In such circumstances, the price of the Company's securities could decline and investors may lose all or part of their investment. For a complete list of the Company's Risk Factors, please refer to our "Annual Information Form" filed on Sedarplus.ca on June 26, 2023.

### **Risks Relating to the Loss of Foreign Private Issuer Status**

Effective January 1, 2023 we no longer qualified as a Foreign Private Issuer under US securities laws and as such are subject to the U.S. securities laws as applicable to U.S. domestic companies.

The Company has determined that it ceased to qualify as a "foreign private issuer" ("FPI"), as such term is defined in Rule 405 under the Securities Act and Rule 3b-4 under the United States Securities Exchange Act of 1934 (the "Exchange Act"), as of June 30, 2022, being the last business day of our most recently completed second fiscal quarter. As a result, commencing January 1, 2023, the Company is no longer eligible to rely on relief of certain requirements under the Exchange Act available to FPIs, and as such securities issued by the Company will no longer qualify for resale outside of the United States under Rule 904 of Regulation S without a restrictive legend applying. As a result, commencing January 1, 2023, investors acquiring securities of the Company will not be able to rely on such rule to sell Securities outside of the United States in advance of the restrictions under Rule 144 under the Securities Act being removed, which typically results in a 12 month restriction on the ability of the holder to resell such Securities. Once an issuer fails to qualify for foreign private issuer status it will remain unqualified unless it subsequently meets the requirements for foreign private issuer status as at the last business day of its second fiscal quarter. If the Company subsequently qualifies as a foreign private issuer on the last business day of a subsequent second fiscal quarter, the Company will immediately be able to rely on provisions under US securities laws applicable to foreign private issuers.

### **Financing risks**

Our operations have required substantial amounts of capital since inception, and we expect our expenses to increase significantly in the foreseeable future. Identifying potential product candidates and conducting preclinical testing and clinical trials is a time-consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain regulatory approval and achieve product sales. We expect to continue to incur significant expenses and operating losses over the next several years as we complete our ongoing clinical trials of our product candidates, initiate future clinical trials of our product candidates, seek marketing approval for ALPHA-1062 for mild-to-moderate Alzheimer's disease, prepare for commercialization activities and advance any of our other product candidates we may develop or otherwise acquire. In addition, our product candidates, if approved, may not achieve commercial success.

As of June 30, 2023, we had \$1.2 million in cash and cash equivalents and have not generated positive cash flows from operations. We will need to raise additional capital. Additional capital may not be available on a timely basis, on favorable terms, or at all, and such funds, if raised, may not be sufficient to enable us to continue to implement our long-term business strategy. Further, our ability to raise additional capital may be adversely impacted by recent volatility in the equity markets in Canada, the United States and worldwide. Our failure to raise capital as and when needed or on acceptable terms would have a negative impact on our financial condition and our ability to pursue our business strategy, and we may have to delay, reduce the scope of, suspend or eliminate one or more of our research-stage programs, clinical trials or future commercialization efforts.

### **History of operating losses and negative cash flow from operating activities**

The Company has reported negative cash flow from operating activities since inception and expects to experience negative operating cash flows for the foreseeable future. The operating losses will continue as significant costs will be incurred to further the clinical development of ALPHA-1062 and development of the PGRN Technology. Until any approval from the FDA and other regulatory authorities for the sale of ALPHA-1062, the Company's working capital requirements are dependent on the Company's ability to raise capital by future issuances of common shares, debt instruments or other securities convertible into common shares or through potential partnership or strategic financing opportunities, if any become available at terms that are acceptable to the Company.

### **Our business is heavily dependent on the successful development, regulatory approval and commercialization of ALPHA-1062 and any future product candidates that we may develop or acquire.**

The success of our business, including our ability to finance our company and generate revenue in the future, will primarily depend on the successful development, regulatory approval and commercialization of our product candidates and, in particular, the advancement of ALPHA-1062, currently our only clinical-stage product candidate. We cannot be certain that our product candidates will receive regulatory approval or be successfully commercialized even if we receive regulatory approval. The clinical and commercial success of ALPHA-1062 and any future product candidates that we may develop or acquire will depend on a number of factors, including the following:

- acceptance of our proposed indications and primary endpoint assessments relating to the proposed indications of our product candidates by the FDA and similar foreign regulatory authorities;
- our ability to demonstrate to the satisfaction of the FDA and similar foreign regulatory authorities the safety, efficacy and acceptable risk to benefit profile of our product candidates or any future product candidates;
- the prevalence, duration and severity of potential side effects or other safety issues experienced with our product candidates or future approved products, if any;
- the willingness of physicians, operators of clinics and patients to utilize or adopt any of our product candidates or any future product candidates, if approved; and
- our ability to achieve sufficient market acceptance, coverage and adequate reimbursement from third-party payors and adequate market share and revenue for any approved products;

These factors, many of which are beyond our control, could cause us to experience significant delays or an inability to obtain regulatory approvals or commercialize our product candidates. Even if regulatory approvals are obtained, we may never be able to successfully commercialize any of our product candidates.

### **Research and development risk**

The Company's organic growth and long-term success is dependent in part on its ability to successfully develop products and it will likely incur significant research and development expenditures to do so. The Company cannot be certain that any investment in research and development will yield technically feasible or commercially viable products. Furthermore, its ability to discover and develop products will depend on its ability to:

- retain key scientists as employees, consultants or partners;

- develop products internally and assist its partners with development;
- successfully complete laboratory testing and clinical trials on humans;
- obtain and maintain necessary intellectual property rights to the Company's products;
- obtain and maintain necessary U.S. and other regulatory approvals for its products;
- collaborate with third parties to assist in the development of its products; and
- enter into arrangements with third parties to co-develop, license, and commercialize its products.

The Company may not be successful in developing its drug products. Failure to introduce and advance current and new products could materially and adversely affect the Company's operations and financial condition.

### **Clinical development risks**

The Company must demonstrate the safety and efficacy of their products through extensive clinical testing. The Company's drug research and development programs are various stages of development including early stage of development. Numerous unforeseen events during, or as a result of, the testing process could delay or prevent required FDA and regulatory approvals and thus future commercialization of any products the Company develops, including the following:

- the results of clinical studies may be inconclusive, may demonstrate potentially unsafe drug characteristics, or may not be indicative of results that will be obtained in later clinical trials;
- the safety and efficacy results attained in the clinical studies may not be indicative of results that are obtained in later clinical trials;
- after reviewing clinical study results, the Company or its partners or collaborators may abandon projects that were previously thought to be promising.

Clinical studies are very expensive, can run into unexpected difficulties and the outcomes are uncertain. The final data collected from studies the Company conducts may not be sufficient to support the further clinical development of ultimately regulatory approval of such product(s). Clinical studies of the Company's products may not be completed on schedule or on budget, with available capital resources. The Company's failure to complete any of its clinical studies on schedule or on budget, or its failure to adequately demonstrate the safety and efficacy of any of the products it develops, could delay or prevent regulatory approval of such products, which could adversely affect the Company's business, financial condition, and results of operations.

### **Even if our current or future product candidates obtain regulatory approval, they may fail to achieve the broad degree of adoption and use by physicians, patients, hospitals, healthcare payors and others in the medical community necessary for commercial success.**

Even if one or more of our product candidates receive FDA or other regulatory approvals, they may nonetheless fail to gain sufficient market acceptance by physicians, patients, healthcare payors and others in the medical community. Most of our product candidates target mechanisms for which there are limited or no currently approved products, which may result in slower adoption by physicians, patients and payors. If our product candidates do not achieve an adequate level of acceptance, we may not generate significant product revenue and we may not become profitable. The degree of market acceptance of our product candidates, if approved for commercial sale, will depend on a number of factors, including:

- the safety and efficacy of our product as compared to other available therapies;
- the availability of coverage and adequate reimbursement from governmental healthcare plans or third party payors for any of our product candidates that may be approved;
- physician and patient willingness to adopt a new therapy over other available therapies to treat approved indications;
- patient satisfaction with the results and administration of our product candidates and overall treatment experience, including, for example, the convenience of any dosing regimen;
- the cost of treatment with our product candidates in relation to alternative treatments and reimbursement levels, if any, and willingness to pay for the product, if approved, on the part of insurance companies and other third-party payors, physicians and patients;
- the revenue and profitability that our products may offer a physician as compared to alternative therapies; and

- limitations or warnings contained in the FDA-approved labeling for our products.

We cannot assure you that our current or future product candidates, if approved, will achieve broad market acceptance among physicians, patients, healthcare payors and others in the medical community. Even if we receive regulatory approval to market any of our product candidates, we cannot assure you that any such product candidate will be more effective than other commercially available alternatives or successfully commercialized. Any approval we may obtain could be for indications or patient populations that are not as broad as intended or desired or may require labeling that includes significant use or distribution restrictions or safety warnings. We may also be required to perform additional or unanticipated clinical trials to obtain approval or be subject to additional post-marketing testing requirements to maintain approval. In addition, regulatory authorities may withdraw their approval of a product or impose restrictions on its distribution, such as in the form of a REMS. Any failure by our product candidates that obtain regulatory approval to achieve market acceptance or commercial success would adversely affect our reputation, ability to raise additional capital, financial condition, results of operations and business prospects.

**The FDA approval process is rigorous, and there is no guarantee that a new drug will be approved.**

The FDA approval process is rigorous, and there is no guarantee that a new drug will be approved. Any delays or denials in the approval process can impact the Company's revenue and reputation. Clinical trials are a critical component of the NDA filing process, and any issues related to the quality or quantity of clinical trial data can delay or impact FDA approval. Inadequate data may also lead to questions around the safety and efficacy of the drug. The NDA filing process involves numerous regulations, and any failure to comply with them can result in legal and financial penalties, as well as damage to the Company's reputation. It is critical for biopharma companies to ensure that their NDA filings are accurate, complete, and comply with all regulatory requirements. The NDA filing process requires the disclosure of proprietary information, including data from clinical trials and manufacturing processes. Any unauthorized disclosure of this information can harm the Company's potential revenue and reputation. The biopharma industry is highly competitive, and any delay in FDA approval or failure to obtain approval can give competitors an advantage. Additionally, the approval of similar drugs can impact the market potential for a new drug. The NDA filing process involves the manufacturing and distribution of pharmaceutical products. Any issues related to the manufacturing process or disruptions in the supply chain can impact the quality, safety, and efficacy of pharmaceutical products, leading to product recalls or delays in commercialization.

**The manufacture of drugs is complex, and our third-party manufacturers may encounter difficulties in production. If any of our third-party manufacturers encounter such difficulties, our ability to provide an adequate supply of our product candidates for clinical trials or our products for patients, if approved, could be delayed or prevented.**

Manufacturing drugs, especially in large quantities, is complex and may require the use of innovative technologies. Each lot of an approved drug product must undergo thorough testing for identity, strength, quality, purity and potency. Manufacturing drugs requires facilities specifically designed for and validated for this purpose, as well as sophisticated quality assurance and quality control procedures. Slight deviations anywhere in the manufacturing process, including filling, labeling, packaging, storage and shipping and quality control and testing, may result in lot failures or product recalls. When changes are made to the manufacturing process, we may be required to provide preclinical and clinical data showing the comparable quality and efficacy of the products before and after such changes. If our third-party manufacturers are unable to produce sufficient quantities for clinical trials or for commercialization as a result of these challenges, or otherwise, our development and commercialization efforts would be impaired, which would have an adverse effect on our business, financial condition, results of operations and growth prospects.

**Our success depends on our ability to obtain and maintain patent protection for our technology and product candidates including our lead product candidate, ALPHA-1062. If such protection is not obtained, the scope of the patent protection obtained is not sufficiently broad, or we lose such protection, we may not be able to compete effectively in our markets.**

Our success depends in large part on our ability to obtain and maintain patent protection in the United States and other countries with respect to our technology and product candidates. We seek to protect our proprietary

position by filing patent applications in the United States and abroad related to our current and future drug development programs and product candidates, successfully defend our intellectual property rights against third-party challenges and successfully enforce our intellectual property rights to prevent third-party infringement. The patent prosecution process is expensive and time-consuming, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. The patents and patent applications that we own may fail to result in issued patents with claims that protect any of our product candidates in the United States or in other foreign countries. We cannot guarantee any current or future patents will provide us with any meaningful protection or competitive advantage.

**Our plans to out-license TBI related program may not succeed.**

The Company expects to out-license the limited use of ALPHA-1062 solely for applications in treating mTBI and TBI to Alpha Seven. The establishment and funding of Alpha Seven are at the proposal stage only. There is no guarantee that the Company will be successful at launching Alpha Seven as a separately funded entity, or at all. If successfully launched, there is no guarantee that Alpha Seven will be successful in advancing the ALPHA-1062/IN for use in TBI or mTBI.

The Company's ability to out-license its technology or intellectual property may be limited by the strength and enforceability of its intellectual property rights, as well as the willingness of potential licensees to pay for such rights. The Company may be unable to obtain or enforce patent protection for its technology, which could limit its ability to out-license the technology to Alpha Seven. In addition, the Company's competitors may challenge the validity or enforceability of its patents or other intellectual property rights, which could result in costly legal proceedings that may adversely affect the Company's financial condition or its ability to out-license its technology to Alpha Seven. Even if the Company is able to out-license its technology or intellectual property to Alpha Seven, it may not receive the expected financial benefits or other advantages from such arrangements and may face competition from other technologies or companies. The failure to successfully out-license the technology or intellectual property to Alpha Seven could have a material adverse effect on the Company's financial condition, results of operations, and prospects.

**If we are unable to establish sales capabilities on our own or through third parties, we may not be able to market and sell our product candidates, if approved.**

In order to commercialize our product candidates in the United States and foreign jurisdictions, we must build or partner marketing, sales, distribution, managerial and other non-technical capabilities or make arrangements with third parties to perform these services, and we may not be successful in doing so. There are significant risks involved in building and managing a sales organization, including our ability to hire, retain and incentivize qualified individuals, generate sufficient sales leads, provide adequate training to sales and marketing personnel and effectively manage a geographically dispersed sales and marketing team. Any failure or delay in the development of our internal sales, marketing and distribution capabilities would adversely impact the commercialization of these products. If we are not successful in commercializing our product candidates or any future product candidates, either on our own or through arrangements with one or more third parties, we may not be able to generate any future product revenue and we would incur significant additional losses.

**If we fail to attract and retain senior management and key scientific personnel, our business may be materially and adversely affected.**

We are highly dependent upon members of our senior management, particularly our Chief Executive Officer, as well as our senior scientists and other members of our management team. The loss of services of any of these individuals could delay or prevent the successful development of our product pipeline, initiation or completion of our planned clinical trials or the commercialization of our product candidates or any future product candidates. Competition for qualified personnel in the biopharmaceutical field is intense due to the limited number of individuals who possess the skills and experience required by our industry. We will need to hire additional personnel as we expand our clinical development and if we initiate commercial activities. We may not be able to attract and retain quality personnel on acceptable terms, or at all. In addition, to the extent we hire personnel from competitors, we may be subject to allegations that they have been improperly solicited or that they have divulged proprietary or other confidential information, or that their former employers own their research output.

**If we sell our Common Shares in future financings, shareholders may experience immediate dilution and, as a result, our stock price may decline.**

Because we expect our expenses to increase significantly in the foreseeable future and because, based on our current business plans, we believe that any net proceeds from future financings, together with our existing cash, cash equivalents and marketable securities, will be insufficient for us to fund our operating and capital expenditures beyond the date that is months after the date of this AIF, we may from time to time issue additional Common Shares. These issuances may be at a discount from the current trading price of our Common Shares. As a result, our shareholders would experience immediate dilution upon the purchase of any Common Shares sold at such discount. In addition, as opportunities present themselves, we may enter into financing or similar arrangements in the future, including the issuance of debt securities or Common Shares. If we issue Common Shares or securities convertible into Common Shares, our shareholders will experience additional dilution and, as a result, our stock price may decline.

**ACCOUNTING PRONOUNCEMENTS NOT YET ADOPTED**

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A number of amendments to standards and interpretations applicable to the Company that are not yet effective for the six months ended June 30, 2023 and have not been applied in preparing the Interim Financial Statements nor does the Company expect these amendments to have a significant effect on its Interim Financial Statements.

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

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The CFO, together with other members of management, have designed the Company's disclosure controls and procedures in order to provide reasonable assurance that material information relating to the Company and its consolidated subsidiaries would be known to them, and by others, within those entities.

Management has also designed internal controls over financial reporting to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the financial statements in accordance with IFRS. Management has assessed the effectiveness of the Company's internal control over financial reporting as of the six months ended June 30, 2023.

While the officers of the Company have designed the Company's disclosure controls and procedures and internal controls over financial reporting, they expect that these controls and procedures may not prevent all errors and fraud. A control system, no matter how well conceived or operated, can only provide reasonable, not absolute assurance that the objectives of the control system are met.

**DISCLOSURE DATA FOR OUTSTANDING COMMON SHARES, OPTIONS, AND WARRANTS**

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The Company is authorized to issue the following share capital:

- Unlimited common voting shares without par value ("Common Share")
- Unlimited Class A restricted voting shares without par value ("Restricted Share")
- Unlimited Class B preferred Series A shares without par value ("Class B Preferred Shares")



Below is a summary of the shares, stock options, and share purchase warrants issued and outstanding as at June 30, 2023 and the date of this report:

	June 30, 2023	Date of this Report
Common Shares	87,950,664	87,950,664
Restricted Shares	7,000,000	7,000,000
Class B Preferred Shares	7,916,380	7,916,380
Common Share options	21,086,071	21,086,071
ACI Canada legacy performance options	8,471,057	8,471,057
Warrants	37,436,200	37,396,200

### Common Share options

The Company has issued incentive options to certain directors, officers, and consultants of the Company. As of the date of this report, the following Common Share options are outstanding and exercisable:

Options Outstanding	Options Exercisable	Exercise Price	Expiry Date
31,513	31,513	0.54 (CAD\$0.714)	September 21, 2023
39,154	39,154	0.40	June 1, 2029
39,154	39,154	0.40	July 22, 2030
2,600,000	866,667	0.21 (CAD\$0.28)	August 3, 2031
131,250	131,250	0.80	August 16, 2031
940,000	705,000	0.21 (CAD\$0.28)	December 20, 2031
215,000	53,751	0.21 (CAD\$0.28)	February 14, 2032
450,000	112,500	0.21 (CAD\$0.28)	April 11, 2032
450,000	145,836	0.21 (CAD\$0.28)	May 31, 2032
16,190,000	2,909,141	0.17 (CAD\$0.22)	June 8, 2033
<b>21,086,071</b>	<b>5,033,966</b>		

**ACI Canada legacy performance options**

The Company has issued incentive options to certain directors, officers, and consultants of the Company. As of the date of this report, the following share options are outstanding and exercisable:

<b>Options Outstanding</b>	<b>Options Exercisable</b>	<b>Exercise Price</b>	<b>Expiry Date</b>
		<b>\$</b>	
900,000	900,000	0.001	February 1, 2026
691,057	691,057	0.01	December 31, 2027
3,875,000	3,655,000	0.01	September 1, 2028
3,005,000	2,805,000	0.01	June 1, 2029
<b>8,471,057</b>	<b>8,051,057</b>		

**Warrants**

A summary of the share purchase warrants outstanding as at the date of this report is as follows:

<b>Warrants Outstanding</b>	<b>Exercise Price</b>	<b>Expiry Date</b>
	<b>\$</b>	
9,602,500	1.32 (CAD\$1.75)	October 1, 2023
659,627	1.13 (CAD\$1.50)	October 1, 2023
3,061,783	0.40	August 30, 2024
16,795,221	0.29 (CAD\$0.39)	February 16, 2028
7,277,069	0.29 (CAD\$0.39)	March 15, 2028
<b>37,396,200</b>		

**OTHER MD&A REQUIREMENTS**

Additional information relating to the Company may be found on or in:

- SEDAR+ at [www.sedarplus.ca](http://www.sedarplus.ca);
- the Company's condensed interim consolidated financial statements for the three and six months ended June 30, 2023 and 2022; and
- the Company's audited consolidated financial statements for the years ended December 31, 2022 and 2021.

This MD&A was approved by the Board of Directors of Alpha Cognition Inc. effective August 21, 2023.