



**ALPHA COGNITION INC.**

Management's Discussion and Analysis  
For the year ended December 31, 2022

(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 year ended December 31, 2022. 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") 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.sedar.com](http://www.sedar.com).

## 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 March 8, 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.sedar.com](http://www.sedar.com) 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"). 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 Amyotrophic Lateral Sclerosis ("ALS"), for which there are limited treatment options.

ALPHA-1062, is a patented new chemical entity 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 dementia and as an intranasal formulation for traumatic brain injury.

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.

On March 18, 2021, the Company announced the successful closing of a business combination with ACI Canada (the "Transaction"). Pursuant to the Transaction, ACI Canada was acquired by and became a wholly-owned subsidiary of ACI. As part of the Transaction, on March 18, 2021, the Company changed its name to Alpha Cognition Inc. and ACI Canada changed its name to Alpha Cognition Canada Inc. The common shares of the Company are currently listed on TSX Venture Exchange ("TSX-V") under the ticker symbol "ACOG" and on the Over-The-Counter ("OTC") under the trading symbol "ACOGF".

Upon closing of the Transaction, the shareholders of ACI Canada owned 97.23% of the shares of the Company, and as a result, the transaction is considered a reverse acquisition of the Company by ACI Canada. All previous common shares, share options, and warrants were exchanged at a ratio of one share of ACI Canada for one of ACI. For accounting purposes, ACI Canada is considered the acquirer of the Company accordingly, the consolidated financial statements are in the name of Alpha Cognition Inc.; however, they are a continuation of the financial statements of ACI Canada (Refer to Arrangement Agreement section).

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

The Company has not generated revenues from its operations to date and as at December 31, 2022, had a deficit of \$49,986,851 (2021 - \$38,033,903) which has been primarily financed by equity. The Company had \$2,083,696 in Cash and \$4,056,844 in current liabilities as of December 31, 2022. 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 addition financing, in addition to the private placement financing the Company closed on February 16, 2023 and another expected to close early March 2023, to cover upcoming planned 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.

During the third quarter of 2022 the Company 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.

On November 28, 2022, the Company announced that it had withdrawn the marketed public offering of units previously announced on November 17, 2022. The withdrawal resulted from an assessment by the Company's management that current market conditions were not conducive for an offering on terms that would be in the best interests of the Company's stockholders. As a result of such withdrawal, no securities will be sold pursuant to the offering.

On February 16, 2023 the Company announced the first closing of its planned CAD\$6.8 million Private Placement, where the offering included existing stockholders and new investors. Pursuant to the private placement, the Company issued 16,795,221 units at a price of CAD\$0.255 per Unit (US\$0.19), with each unit comprising a common share and a share purchase warrant. Each warrant entitles the holder to purchase one additional common share of the Issuer at a price of CAD\$0.39 (US\$0.29) per share for a period of five years. The private placement was subject to the satisfaction of customary closing conditions, including stock exchange approval. The Company expects to use the net proceeds from the Private Placement, together with its existing cash, cash equivalents and investments, for the advancement of the Company's clinical development programs, complete and file a New Drug Application for ALPHA-1062, and for working capital and other general corporate purposes. The Company also announced as of February 16, 2023 it has also entered into subscription agreements towards a second tranche closing for an additional 6.48 million units or CAD\$1.65 million under the Offering. The second tranche is expected to close early March 2023

In March 2023, the Company entered into an amendment of the Promissory Note and License Agreement with the Neurodyn Life Sciences Inc. promissory note holders to extend the maturity of the \$1.2M outstanding promissory note to July 15, 2024, the previous maturity date of the promissory note was December 31, 2022. The parties also agreed to increase the Promissory Note interest rate from 2% annually to a market rate of 5.5% annually. (see Note 7 of the accompanying audited financial statements).

### **ALPHA-1062**

ALPHA-1062 is a patented new chemical entity. When absorbed through mucosal tissue or ingested it is enzymatically converted to an active moiety that has previously been approved by the U.S. 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 a faster dosing up-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, subsequently oral dosage formulations have been developed.

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

- Clinical: 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.

### **ALPHA-1062 Clinical Development**

The original nasal formulation of ALPHA-1062 was used to conduct Phase I human studies, initially by Neurodyn Life Sciences Inc. ("NLS"), a related party through a common director, 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 three studies in Q2/Q3 2022. The studies were designed to demonstrate pharmacokinetic equivalence compared to the reference listed drug galantamine hydrobromide IR and ER, which are a standard of care treatment for patients with mild to moderate AD. 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 IR and galantamine hydrobromide ER.

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 June-July 2023, with possible FDA approval for the U.S. market by Q2 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
AUC0-inf (µg × h/mL) Fasted State	306.8	321.5	95%	✓	AUC0-24 (µg × h/mL) Steady State	527.5	492.1	107%	✓
Cmax (ng/mL) Fasted State	30.7	40.5	76%	✓	Cmax (ng/mL) Steady State	41.7	32.8	127%	✓
AUC0-inf (µg × h/mL) Fed State	286.7	329.9	87%	✓					
Cmax (ng/mL) Fed State	27.6	30.2	91%	✓					

- Data confirms **ALPHA-1062 AUC is bioequivalent to galantamine hydrobromide IR and ER**
- Cmax 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

**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. 36 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 Cmax, 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 Cmax 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 Cmax ratio to reference drug for ALPHA-1062 was 76% (30.7) in the fasted study and 91% (27.6) in the fed study both Cmax results being higher than the published Cmax 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 Cmax 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 Cmax compared to galantamine hydrobromide in the fed state. When the Cmax of a proposed drug product falls

between the reported Cmax 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 (ER) capsules, when dosed to steady state. Bioequivalence was established based on total drug exposure (AUC) and the Cmax 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 AD, planned for June/July 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 ER. In the pre-specified primary analysis, ALPHA-1062 achieved area-under-the-curve and peak exposures (Cmax) of approximately 107% and 127%, respectively, compared to those generated by galantamine hydrobromide ER. As expected, Cmax results for ALPHA-1062 is bracketed between galantamine hydrobromide IR and ER (lower than IR, higher than ER) 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 now plans to file its NDA for ALPHA-1062 in mild-to-moderate Alzheimer's disease during June-July 2023, allowing the company to include additional CMC stability data in the NDA filing. The company's projected approval date for ALPHA-1062 is Q2 2024.

**RESOLVE Tolerability Study:** Following NDA approval for ALPHA-1062 in mild to moderate AD the Company plans to initiate an Alzheimer's disease tolerability and dosing trial with ALPHA-1062. This trial is called the RESOLVE Study which could potentially support prescribing information changes and could allow patients to achieve an efficacious dose more quickly than with current treatments. While not required for ALPHA-1062's 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 ("IRB") approval has been received and the final study protocol has been submitted to the IND. The Company expects to initiate the RESOLVE trial in Q4 2024, following NDA approval of ALPHA-1062 and securing additional funding.

**Mild Traumatic Brain Injury (mTBI):** The Company has also completed a pre-clinical study of ALPHA-1062 in mTBI. The Company is encouraged by the preclinical data and is planning to request a meeting with the FDA in Q3 2023 to discuss IND submission and further clinical development plans. Pending FDA feedback, the Company is targeting the IND submission for Alpha-1062 Intranasal of mTBI in Q4 2023.

In December 2021, the Company announced functional data from the ALPHA-1062 Traumatic Brain Injury (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-1062 treated group was statistically indistinguishable from that of the uninjured cohort.

In a rodent model of TBI, ALPHA-1062 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-1062 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-1062 Traumatic Brain Injury (TBI) program. ALPHA-1062 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-1062 for the treatment of TBI.

Compared to vehicle, ALPHA-1062 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-1062 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.

#### ALPHA – 1062 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 ensure a successful launch in the US. 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 US from these two specialties is large, representing 63 percent of the over 11 million prescriptions filled in pharmacies each year. The AChEI class include 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 four and 55% discontinuing treatment within one year. The Company believes that patients who discontinue a first therapy will try a 2<sup>nd</sup> and 3<sup>rd</sup> 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, Alpha Cognition 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.

**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 ("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 U.S. 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 Alpha Cognition'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 Alpha Cognition'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 ALPH A-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 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

In January 2022, the Company issued 21,008 Common shares for the exercise of 21,008 Common shares options at a price of CAD\$0.714 per share for total proceeds of \$11,851 (CAD\$15,000).

In February 2022, the Company granted 230,000 share options to certain employees of the Company with an exercise price of CAD\$1.05 per share. The options will be subject to the following vesting terms: 25% will vest on February 14, 2023 and the remaining 75% will vest in equal monthly instalments until February 14, 2025.

In February 2022, the Company issued 350,000 Common shares for the exercise of 350,000 ACI Canada legacy performance options at a price of \$0.01 per share for total proceeds of \$3,500.

In March 2022, the Company issued 45,511 Common shares for the exercise of 45,511 Common shares options at a price of CAD\$0.714 per share for total proceeds of \$25,570 (CAD\$32,495).

In April 2022, the Company appointed Don Kalkofen as the new Chief Financial Officer (“CFO”), replacing Jeremy Wright.

In April 2022, the Company granted 450,000 share options to the new CFO of the Company with an exercise price of CAD\$0.93 per share for a period of ten years from date of grant. The options will be subject to the

following vesting terms: 25% will vest in equal monthly instalments until April 11, 2023 and the remaining 75% will vest in equal monthly instalments until April 11, 2025.

In April 2022, Michael McFadden, the CEO of the Company, was appointed to the board of directors

In May 2022, the Company granted 90,000 share options with an exercise price of CAD\$0.64 per share. The options will be subject to the following vesting terms: 25% will vest on date of grant and the remaining 75% will vest in equal monthly instalments over a 24 month period.

During the year ended December 31, 2022, 895,007 stock options were forfeited, of which \$161,750 was reallocated from reserves to deficit, \$5,532 was reallocated from reserves to stock-based compensation under general and administrative, and \$112,017 was reallocated from reserves to stock based compensation under research & development.

### **Subsequent Events**

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 \$0.28 per share and vest in monthly installments over either an 8 month, 18 month or 24 month term.

On February 8, 2023, the Company commenced a brokered private placement financing whereby the Company may issue up to 26,666,667 units at a price of CAD\$0.255 per unit for gross proceeds of up to CAD\$6,800,000 ("February 2022 PP"). Each unit consists of a common share and a share purchase warrant with each share purchase warrant entitling the holder to purchase an additional common share at a price of CAD\$0.39 per common share for a period of five years. In connection with the brokered private placement, the Company is to incur share issuance costs of commissions up to 7% of gross proceeds and issuance of warrants equal up to 5% of units issued in offering.

On February 16, 2023, the Company closed the first tranche of the February 2022 PP by issuing 16,795,221 units of the Company at a price of CAD\$0.255 per unit, for gross proceeds of CAD\$4,282,781. The Company also announced as of February 16, 2023 it has also entered into subscription agreements towards a second tranche closing for an additional 6.48 million units or CAD\$1.65 million under the Offering. The second tranche is expected to close early March 2023.

On March 6, 2023, the Company and NLS agree 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 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.

### **ARRANGEMENT AGREEMENT**

On October 27, 2020, ACI Canada entered into an Arrangement Agreement with ACI whereby ACI would acquire 100% of the issued and outstanding shares of ACI Canada by issuing to the shareholders of ACI Canada one common share of ACI ("CPC Share") for every one common share of ACI Canada share held by each ACI Canada shareholder (the "Transaction"). Certain US resident ACI Canada shareholders agreed to receive a restricted voting share (a "Restricted Voting Share") in place of a CPC Share which is equivalent to a CPC Share except that it will not be counted in a shareholder vote for the election of directors. In addition, holders of Class C Preferred shares of ACI Canada received one Class B Preferred Share of ACI for each Class C Preferred share of ACI Canada held by such shareholder. The outstanding options and warrants of ACI Canada became convertible into options and warrants of ACI.

On March 18, 2021, the Transaction completed resulting in ACI acquiring 100% of the shares of ACI Canada and ACI Canada's shareholders receiving 42,615,495 post-consolidated common shares, 7,000,000 restricted voting shares, 7,916,380 preferred shares, 11,819,169 warrants, and 10,069,365 share options of ACI. The

ACI shareholders retained 1,640,507 common shares on completion of the transaction and the former ACI share option holders were granted 108,543 share options.

The transaction constituted a reverse acquisition of ACI and has been accounted for as a reverse acquisition transaction in accordance with the guidance provided under IFRS 2, *Share-based Payment* and IFRS 3, *Business Combinations*. As ACI did not qualify as a business according to the definition in IFRS 3, *Business Combination*, this reverse acquisition does not constitute a business combination; rather the transaction was accounted for as an asset acquisition by the issuance of shares of the Company, for the net assets of ACI and its public listing. Accordingly, the transaction has been accounted for at the fair value of the equity instruments granted by the shareholders of ACI Canada to the shareholders and option holders of ACI. The sum of the fair value of the consideration paid (based on the fair value of the ACI shares just prior to the reverse acquisition) less the ACI net assets acquired, has been recognized as a listing expense in profit or loss for the year ended December 31, 2021.

For accounting purposes, ACI Canada was treated as the accounting parent company (legal subsidiary) and ACI has been treated as the accounting subsidiary (legal parent) in these condensed interim consolidated financial statements. As ACI Canada was deemed to be the acquirer for accounting purposes, its assets, liabilities and operations since incorporation are included in the consolidated financial statements at their historical carrying value. The results of operations of ACI are included in the consolidated financial statements from the date of the reverse acquisition of March 18, 2021.

## **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 judgments made by management in the preparation of these consolidated financial statements are outlined below.

### Uncertainty of COVID-19 Global Pandemics

The Company is subject to risks and uncertainties as a result of the ongoing COVID-19 pandemic. The Company is continuing to closely monitor the impact of the COVID-19 pandemic on its business and has taken and continues to take proactive efforts to protect the health and safety of its patients, clinical research staff and employees, and to maintain business continuity. The extent of the impact of the COVID-19 pandemic on the Company's activities remains uncertain and difficult to predict, as the response to the pandemic is ongoing and information continues to evolve. Capital markets and economies worldwide have been negatively impacted by the COVID-19 pandemic and may be further impacted in the future. Such economic disruption could have a material adverse effect on the Company's business. Policymakers around the globe have responded with fiscal policy actions to support the healthcare industry and economy as a whole. The magnitude and overall effectiveness of these actions remains uncertain.

The severity of the impact of the COVID-19 pandemic on the Company's activities will depend on a number of factors, including, but not limited to, the duration and severity of the pandemic, including the severity of any additional periods of increases or spikes in the number of cases in the areas the Company its suppliers and its manufacturers operate and areas where the Company's clinical trial sites are located; the development and spread of COVID-19 variants, the timing, extent, effectiveness and durability of COVID-19 vaccine programs or other treatments; and new or continuing travel and other restrictions and public health measures, such as social distancing, business closures or disruptions. Accordingly, the extent and severity of the impact on the Company's existing and planned clinical trials, manufacturing, collaboration activities and operations is uncertain and cannot be fully predicted. The Company may experience delays in its existing and planned clinical trials due to the worldwide impacts of the pandemic. The Company's future results of operations and liquidity could be adversely impacted by delays in existing and planned clinical trials, continued difficulty in recruiting patients for these clinical trials, delays in manufacturing and collaboration activities, supply chain disruptions, the ongoing impact on its operating activities and employees, and the ongoing impact of any initiatives or programs that the Company may undertake to address financial and operational challenges. As

of the date of issuance of these consolidated financial statements, the extent to which the COVID-19 pandemic may materially impact the Company's future financial condition, liquidity or results of operations remains uncertain

#### 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. As at December 31, 2022, the functional currency of the Company is Canadian dollar ("CAD") and its subsidiaries is the USD.

#### 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, 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

The Company records intangible assets acquired at their fair value. Determining fair value requires management to use estimates that could be material. Following initial recognition, the Company carries the value of intangible assets at cost less accumulated amortization and any accumulated impairment losses. 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 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.

**SELECTED ANNUAL INFORMATION**

The following financial data is derived from the Company's audited consolidated financial statements for the years ended December 31, 2022, 2021 and 2020.

	Year ended December 31,		
	2022	2021	2020
	\$	\$	\$
Operating expenses	(13,638,504)	(12,096,888)	(6,475,551)
Other income (expenses)	1,523,806	(7,448,128)	691,344
Net loss	(12,114,698)	(19,545,016)	(5,784,207)
Currency translation adjustment	16,806	(101,534)	-
Comprehensive loss	(12,097,892)	(19,646,550)	(5,784,207)
Basic and diluted loss per common share	(0.18)	(0.37)	(0.13)
Working capital (deficiency)	(1,724,103)	10,367,955	4,122,873
Total assets	2,950,951	12,880,368	8,436,205
Total long-term liabilities	205,989	2,048,127	4,842,839

**RESULTS OF OPERATIONS – Year Ended December 31, 2022**

During the year ended December 31, 2022, the Company's primary focus was on the continued development of ALPHA-1062 and ALPHA-0602.

For the year ended December 31, 2022, operating expenses increased by \$1,541,616 from \$12,096,888 in the year ended December 31, 2021 to \$13,638,504 in the year ended December 31, 2022 primarily as a result of:

Operating Expense	Increase / Decrease in Expenses	Explanation for Change
Accretion expenses	Decrease of \$358,911	Decreased due to conversion of convertible promissory notes in 2021 Q1.
Investor relations	Decrease of \$184,601	Decreased due to reduction of investor relation services during 2022.
Management fees and salaries	Increase of \$656,563	Increased due to the hiring of a new management team starting in 2021 Q2, including the current period includes increases for employee related costs including benefits and accruals for discretionary bonuses.
Research and development	Increase of \$843,502	Increased due to continued advancement in the development of ALPHA-1062 and ALPHA-0602.
Share-based compensation	Increase of \$171,160	Increased due to additional share options with graded vesting being granted during 2021 and 2022.
Subcontractors	Increase of \$243,316	Increased due to additional subcontractors being hired during 2022.

The following also occurred during the year ended December 31, 2022 as compared to the year ended December 31, 2021:

- the Company recorded an increase of \$344,271 in foreign exchange loss due to the changes in the foreign exchange rate between the USD and CAD; and
- the Company recorded an increase of \$7,880,156 in the gain on derivative liability on the revaluation of the derivative liability relating to the warrants with an exercise price in USD.

### **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>Q4 2022</b>	<b>Q3 2022</b>	<b>Q2 2022</b>	<b>Q1 2022</b>
	\$	\$	\$	\$
Operating expenses	(3,420,717)	(2,857,472)	(4,417,993)	(2,942,322)
Other income (expenses)	(696,114)	782,268	1,414,160	28,998
Income (loss) for the period	(4,116,831)	(2,075,204)	(3,003,833)	(2,913,324)
Currency translation adjustment	873,874	(680,619)	(376,526)	200,007
Comprehensive income (loss) for the period	(3,242,957)	(2,755,823)	(3,380,359)	(2,713,247)
Loss per share	(0.05)	(0.04)	(0.05)	(0.04)
Weighted average shares	68,023,450	68,023,450	68,023,450	67,815,580

	<b>Q4 2021</b>	<b>Q3 2021</b>	<b>Q2 2021</b>	<b>Q1 2021</b>
	\$	\$	\$	\$
Operating expenses	(4,253,019)	(3,119,960)	(2,267,844)	(2,456,065)
Other income (expenses)	1,103,331	(1,169,093)	2,386,517	(9,768,883)
Income (loss) for the period	(3,149,688)	(4,289,053)	118,673	(12,224,948)
Currency translation adjustment	(46,738)	(60,508)	5,712	-
Comprehensive income (loss) for the period	(3,221,255)	(4,349,561)	124,385	(12,224,948)
Loss per share	(0.05)	(0.08)	(0.00)	(0.28)
Weighted average shares	65,016,609	51,843,927	51,843,927	44,372,787

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;
- Q2 2021 included a gain on the revaluation of derivative liability of \$2,363,196;
- Q1 2021 included share-based compensation in research and development of \$498,351, listing expense of \$1,404,200 from the arrangement agreement, and the recognition of the derivative liability of \$7,810,547 for the warrants with an exercise price in USD; and

## RESULTS OF OPERATIONS – Three Months Ended December 31, 2022

During the three months ended December 31, 2022, the Company's primary focus was on the continued development of ALPHA-1062.

For the three months ended December 31, 2022, operating expenses decreased by \$832,302 from \$4,253,019 in the three months ended December 31, 2021 to \$3,420,717 in the three months ended December 31, 2022 primarily as a result of:

Operating Expense	Increase / Decrease in Expenses	Explanation for Change
Management fees and salaries	Increase of \$134,09	Increased in part due to the hiring of new management team members and employee related costs such benefits and accruals for discretionary bonuses.
Professional fees	Decrease of \$203,656	Decreased due to reduction in legal and accounting fees relating to decrease in corporate activity.
Research and development	Decrease of \$234,513	Decreased due to the Company reducing overall research and development costs primarily related to of ALPHA-1062.
Share-based compensation	Decrease of \$395,536	Decreased due to fewer stock options being granted in the current period compared to comparative period and fewer stock options subject to graded vesting conditions being outstanding in the current period.

The following also occurred during the three months ended December 31, 2022 as compared to the three months ended December 31, 2021:

- the Company recorded an increase of \$858,336 in foreign exchange loss due to the changes in the foreign exchange rate between the USD and CAD; and
- the Company recorded a decrease of \$941,185 in the gain on derivative liability on the revaluation of the derivative liability relating to the warrants with an exercise price in USD.

## LIQUIDITY AND CAPITAL RESOURCES

The Company has not generated revenues from its operations to date and as at December 31, 2022, had a deficit of \$49,986,851 (2021 - \$38,033,903) which has been primarily financed by equity. The Company had \$2,083,696 in cash and \$4,056,844 in current liabilities as of December 31, 2022. 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 addition financing, in addition to the private placement financing the Company closed on February 16, 2023 and another expected to close early March 2023, to cover upcoming planned 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.

During the third quarter of 2022 the Company 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.

On November 28, 2022, the Company announced that it had withdrawn the marketed public offering of units previously announced on November 17, 2022. The withdrawal resulted from an assessment by the Company's management that current market conditions were not conducive for an offering on terms that would be in the best interests of the Company's stockholders. As a result of such withdrawal, no securities will be sold pursuant to the offering.

On February 8, 2023, the Company commenced a brokered private placement financing whereby the Company may issue up to 26,666,667 units at a price of CAD\$0.255 per unit for gross proceeds of up to CAD\$6,800,000 ("February 2022 PP"). Each unit consists of a common share and a share purchase warrant with each share purchase warrant entitling the holder to purchase an additional common share at a price of CAD\$0.39 per common share for a period of five years. In connection with the brokered private placement, the Company is to incur share issuance costs of commissions up to 7% of gross proceeds and issuance of warrants equal up to 5% of units issued in offering.

On February 16, 2023, the Company closed the first tranche of the February 2022 PP by issuing 16,795,221 units of the Company at a price of CAD\$0.255 per unit, for gross proceeds of CAD\$4,282,781. The Company also announced as of February 16, 2023 it has also entered into subscription agreements towards a second tranche closing for an additional 6.48 million units or CAD\$1.65 million under the Offering. The second tranche is expected to close early March 2023.

On March 6, 2023, the Company entered into an amendment of the Promissory Note and License Agreement with the Neurodyn Life Sciences Inc. promissory note holders to extend the maturity of the \$1.2M outstanding promissory note to July 15, 2024, the previous maturity date of the promissory note was December 31, 2022. The parties also agreed to increase the Promissory Note interest rate from 2% annually to a market rate of 5.5% annually. (see Note 7 of the accompanying audited financial statements).

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:

	Year ended December 31,	
	2022	2021
	\$	\$
Cash flows used in operating activities	(9,241,650)	(9,879,338)
Cash flows (used in) provided by investing activities	(4,876)	459,375
Cash flows provided by financing activities	24,785	14,878,245
Effect of foreign exchange on cash	3,644	(82,839)
Increase (decrease) in cash during the year	(9,218,097)	5,375,443
Cash, beginning of year	11,301,793	5,926,350
Cash, end of year	2,083,696	11,301,793

The cash flows used in operating activities decreased by \$637,688 to \$9,241,650 for the year ended December 31, 2022 from \$9,879,338 for 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 used in investing activities for the year ended decreased by \$464,251 compared to the comparative period including the receipt of \$523,041 in cash from the closing of the Arrangement and due to minimal investing activities being incurred during the year ended December 31, 2022

Cash provided by financing activities for the year ended December 31, 2022 decreased by \$14,853,460 compared to the comparative period. During the year ended December 31, 2021, financing activities included raising \$13,651,183 from the issuance of units, net of share issue costs of \$1,195,463, and \$2,440,000 from the exercise of warrants.

## **OFF BALANCE SHEET ARRANGEMENTS**

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The Company did not have any off-balance sheet arrangements as at December 31, 2022 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.

### **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 December 31, 2022 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 and include a provision that if a change of control or significant financing is initiated prior to December 31, 2022, CMI will receive a one-time payment equal to number of months worked subsequent to September 1, 2022 multiplied by \$9,000.

In September 2018, the Company signed a management agreement with 9177 – 586 Quebec Inc. ("9177 Quebec"), a company 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 and to include a provision that if a change of control or significant financing is initiated prior to December 31, 2022, 9177 Quebec will receive a one-time payment equal to number of months worked subsequent to August 15, 2022 multiplied by \$7,500.

In September 2018, the Company signed a management agreement with Clearway Global, LLC ("Clearway Global"), a company controlled by Fred Sancilio, the former President and a director of the Company, which requires monthly payments of \$10,000 per month for an effective term of two years. In June 2019, the Company amended the agreement to increase the monthly fees to \$20,000. Included in the agreement is a provision for a termination payment equal to the greater of (i) \$480,000 less any fees previously paid under the agreement between June 1, 2019 and the date of termination or (ii) \$60,000. In February 2021, the Company amended the agreement to increase the monthly fees to \$24,166 that will terminate December 31, 2022. On December 22, 2021, Fred Sancilio resigned as the President and director of the Company. The management agreement was replaced with a consulting agreement with no longer a provision for a termination payment.

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 terminate 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 December 31, 2022.

In May 2021, the Company hired Lauren D'Angelo, the Chief Commercial Officer of the Company, requiring an annual base compensation of \$350,000. Included in the agreement is a provision for termination payment due to a change of control, the COO 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 December 31, 2022.

In November 2021, the Company signed an employment agreement with Cedric O'Gorman, the Chief Medical Officer 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 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, the CFO 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.

As at December 31, 2022, \$619,361 (2021 - \$182,086) is owing to directors and officers of the Company have been included in accounts payable and accrued liabilities. These balances are in relation to fees and management compensation.

As at December 31, 2022, the Company owed NLS \$1,211,463 for an outstanding promissory note.

During the year ended December 31, 2022, the Company entered into the following transactions with related parties:

- a) Incurred management fees of \$220,508 (2021 - \$215,803) and share-based compensation of \$nil (2021 - \$162,563) to CMI. During the year ended December 31, 2021, CMI converted the First Note debenture into 21,712 shares of the Company for the principal and interest portion. CMI also converted its Second Note debenture into 16,625 units of the Company with each unit consisting of one common share and one-half warrant with each warrant entitling the holder to acquire one common share of the Company for CAD\$2.10 up to March 18, 2023. As at December 31, 2022, \$54,000 (2021 - \$19,064) was included in accounts payable and accrued liabilities owing to CMI.
- b) Incurred management fees of \$140,409 (2021 - \$127,601) to Seatrend. As at December 31, 2022, \$nil (2021 - \$73) was included in accounts payable and accrued liabilities owing to Seatrend.

- c) Incurred management fees included in research and development of \$180,000 (2021 - \$207,450) and share-based compensation included in research and development of \$25,108 (2021 - \$112,768) to 9177 Quebec. During the year ended December 31, 2021, 9177 Quebec converted its First Note debenture into 10,856 shares of the Company for the principal and interest portion. 9177 Quebec also converted its Second Note debenture into 8,312 units of the Company with each unit consisting of one common share and one-half warrant with each warrant entitling the holder to acquire one common share of the Company for CAD\$2.10 up to March 18, 2023. As at December 31, 2022, \$41,250 (2021 - \$27,450) was included in accounts payable and accrued liabilities owing to 9177 Quebec.
- d) Incurred management fees included in research and development of \$nil (2021 - \$273,333) and share-based compensation included in research and development of \$nil (2021 - \$417,395) to Clearway Global. During the year ended December 31, 2021, Clearway Global converted its First Note debenture into 21,712 shares of the Company for the principal and interest portion. Clearway Global also converted its Second Note debenture into 16,625 units of the Company with each unit consisting of one common share and one-half warrant with each warrant entitling the holder to acquire one common share of the Company for CAD\$2.10 up to March 18, 2023.
- e) As of December 31, 2022, \$nil (2021 - \$2,000) was included in accounts payable and accrued liabilities owing to Olera LLC, a company controlled by Fred Sancilio.
- f) Incurred share-based compensation of \$123,148 (2021 - \$100,821) to Len Mertz, a director of the Company. During the year ended December 31, 2021, Mr. Mertz, Mertz Holdings and Mertz Trust, entities controlled by Len Mertz, converted their First Note debentures into 562,518 shares of the Company for the principal and interest portion. Additionally, their Second Note debentures were converted into 430,428 units of the Company with each unit consisting of one common share and one share purchase warrant with each warrant entitling the holder to acquire one common share of the Company for CAD\$2.10 up to March 18, 2023.
- g) Incurred share-based compensation of \$105,462 (2021 - \$80,656) to John Havens, a director of the Company. During the nine months ended December 31, 2021, Mr. Havens converted his First Note debenture into 492,392 shares of the Company for the principal and interest portion. Additionally, Mr. Havens converted his Second Note debenture into 376,838 units of the Company with each unit consisting of one common share and one share purchase warrant with each warrant entitling the holder to acquire one common share of the Company for CAD\$2.10 up to March 18, 2023.
- h) Incurred share-based compensation of \$93,671 (2021 - \$67,214) to Philip Mertz, a director of the Company. During the year ended December 31, 2021, Mr. Mertz converted his First Note debenture into 164,365 shares of the Company for the principal and interest portion. Additionally, Mr. Mertz converted his Second Note debenture into 125,854 units of the Company with each unit consisting of one common share and one share purchase warrant with each warrant entitling the holder to acquire one common share of the Company for CAD\$2.10 up to March 18, 2023.
- i) Incurred share-based compensation of \$93,671 (2021 - \$67,214) to Rob Bakshi, a director of the Company. During the year ended December 31, 2021, Vincorp Holdings, a company controlled by Mr. Bakshi, converted its First Note debenture into 10,856 shares of the Company for the principal and interest portion. Additionally, Vincorp Holdings converted its Second Note debenture into 8,312 units of the Company with each unit consisting of one common share and one share purchase warrant with each warrant entitling the holder to acquire one common share of the Company for CAD\$2.10 up to March 18, 2023.
- j) Incurred legal fees of \$nil (2021 - \$3,642) and administrative fees of \$9,555 (2021 - \$36,028), included in other general and administrative expenses, to Cawkell Brodie LLP, a law firm where Mr. Cawkell is a managing partner.
- k) Incurred other research and development expenses of \$10,500 (2021 - \$18,000) and interest expense of \$24,230 (2021 - \$24,229) to NLS, a company related by common director. As at December 31,

2022, \$11,001 (2021 - \$2,771) was included in accounts payable and accrued liabilities owing to NLS and \$1,211,463 was owed for a promissory note.

- l) Incurred management fees and salaries of \$499,860 (2021 - \$413,222) and share-based compensation of \$595,442 (2021 - \$315,197) to Michael McFadden. As at December 31, 2022, \$218,846 (2021 - \$nil) was included in accounts payable and accrued liabilities and \$5,819 (2021 - \$nil) was included in other long-term liabilities to Mr. McFadden.
- m) Incurred management salaries included in research in development of \$359,712 (2021 - \$301,677) and share-based compensation included in research and development of \$236,574 (2021 - \$94,559) to Lauren D'Angelo, the Company's Chief Commercial Officer. As at December 31, 2022, \$150,151 (2021 - \$64,320) was included in accounts payable and accrued liabilities and \$2,476 (2021 \$nil) was included in other long-term liabilities owing to Ms. D'Angelo.
- n) Incurred management salaries included in research and development of \$400,000 (2021 - \$52,804) and share-based compensation included in research and development of \$172,377 (2021 - \$nil) to Cedric O'Gorman, the Company's Chief Medical Officer. As at December 31, 2022, \$nil (2021 - \$16,667) was included in accounts payable and accrued liabilities owing to Mr. O'Gorman.
- o) Incurred management fees and salaries of \$305,594 (2021 - \$nil) and share-based compensation of \$97,058 (2021 - \$nil) to Don Kalkofen. As at December 31, 2022, \$155,114 (2021 - \$nil) was included in accounts payable and accrued liabilities owing to Mr. Kalkofen.

Summary of key management personnel compensation:

	For the year ended December 31,	
	2022	2021
	\$	\$
Other general and administrative	9,555	40,028
Management fees and salaries	1,166,371	822,228
Professional fees	-	3,642
Research and development - management fees and salaries	939,712	957,764
Share-based compensation	1,576,235	1,485,601
	<b>3,691,873</b>	<b>3,309,263</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, 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. Other long-term liabilities and derivative liability is 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 Note 8 and 9 of the Audited Annual 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 December 31, 2022, the Company had net monetary assets of approximately \$690,000 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 \$51,000. 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 December 31, 2022 and 2021.

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 December 31, 2022, the promissory note bears interest of 2% 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 December 31, 2022, the Company had a working capital deficiency of \$1,724,103.

Contractual undiscounted cash flow requirements for financial liabilities as at December 31, 2022 are as follows:

	≤1 Year	>1-3 Years	Total
	\$	\$	\$
Accounts payable	2,845,381	-	2,845,381
Promissory note	1,211,463	-	1,211,463
	4,056,844	-	4,056,844

## **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 Sedar.com on November 15, 2022.

### **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 December 31, 2022, we had \$2.1 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 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 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 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.

**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.

### **Global pandemics**

The extent to which the ongoing COVID-19 pandemic will continue to impact our business is uncertain and cannot be predicted. The pandemic's impact on our business will depend on a variety of factors, including the timing, extent, effectiveness and durability of vaccine programs or other treatments, new or continuing travel and other restrictions and public health measures, such as social distancing, business closures or disruptions, and the development and spread of COVID-19 variants. As the COVID19 pandemic evolves, we could experience additional disruptions or increased expenses that may adversely impact our business, including delays in receiving the supplies, materials and services needed to conduct clinical trials and preclinical

research, and availability of resources by third party service providers and regulators.

**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 year ended December 31, 2022 and have not been applied in preparing the Annual Audited Financial Statements nor does the Company expect these amendments to have a significant effect on its Annual Audited 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 year ended December 31, 2022.

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 common shares, stock options, and share purchase warrants issued and outstanding as at December 31, 2022 and the date of this report:

	December 31, 2022	Date of this Report
Common shares	61,023,450	77,818,671
Restricted shares	7,000,000	7,000,000
Class B preferred shares	7,916,380	7,916,380
Common share options	5,506,071	5,506,071
ACI Canada legacy performance options	9,521,057	9,521,057
Warrants	15,981,290	32,776,511

### 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 share options are outstanding and exercisable:

Options Outstanding	Options Exercisable	Exercise Price	Expiry Date
200,000	200,000	1.55 (CAD\$2.10)	March 29, 2023
31,513	31,513	0.53 (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	288,889	0.21 (CAD\$0.28)	August 3, 2031
131,250	131,250	0.80	August 16, 2031
400,000	100,000	0.83 (CAD\$1.12)	December 20, 2031
940,000	235,000	0.21 (CAD\$0.28)	December 20, 2031
215,000	17,917-	0.21 (CAD\$0.28)	February 14, 2032
450,000	37,500	0.21 (CAD\$0.28)	April 11, 2032
10,000	-	0.47 (CAD\$0.64)	May 31, 2032
450,000	48,611	0.21 (CAD\$0.28)	May 31, 2032
<b>5,506,071</b>	<b>1,168,988</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:

Options Outstanding	Options Exercisable	Exercise Price	Expiry Date
		\$	
900,000	900,000	0.001	February 1, 2026
691,057	691,057	0.01	December 31, 2027
4,400,000	3,960,000	0.01	September 1, 2028
3,530,000	3,180,000	0.01	June 1, 2029
<b>9,521,057</b>	<b>8,731,057</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>	
2,486,647	1.55 (CAD\$2.10)	March 18, 2023
130,733	1.18 (CAD\$1.60)	March 18, 2023
40,000	0.40	July 5, 2023
9,602,500	1.29 (CAD\$1.75)	October 1, 2023
659,627	1.11 (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
<b>32,776,511</b>		

**OTHER MD&A REQUIREMENTS**

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

- SEDAR at [www.sedar.com](http://www.sedar.com); 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 March 8, 2023.