



NeuroScientific
BIOPHARMACEUTICALS

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R&D Program Update

- CVN Alzheimer's disease animal study is progressing as expected, results due early July
- An imaging biomarker that demonstrates efficacy is being developed
- Safety and toxicity program to support Phase I clinical study is progressing as expected
- Ophthalmology studies set to begin mid-May
- Company will attend BIO 2019 Annual Conference in Philadelphia in June to progress initial partnering and co-development opportunities
- Company also to present at the 121 Technology Investment Conference in Hong Kong

Perth, Australia; 16 May 2019: Drug development company NeuroScientific Biopharmaceuticals Ltd (ASX:NSB, "NSB" or the "Company") is pleased to announce that all study programs involving its lead drug candidate EmtinB are on track and the Company is set to report on a number of important outcomes in the coming months.

CVN Animal Study

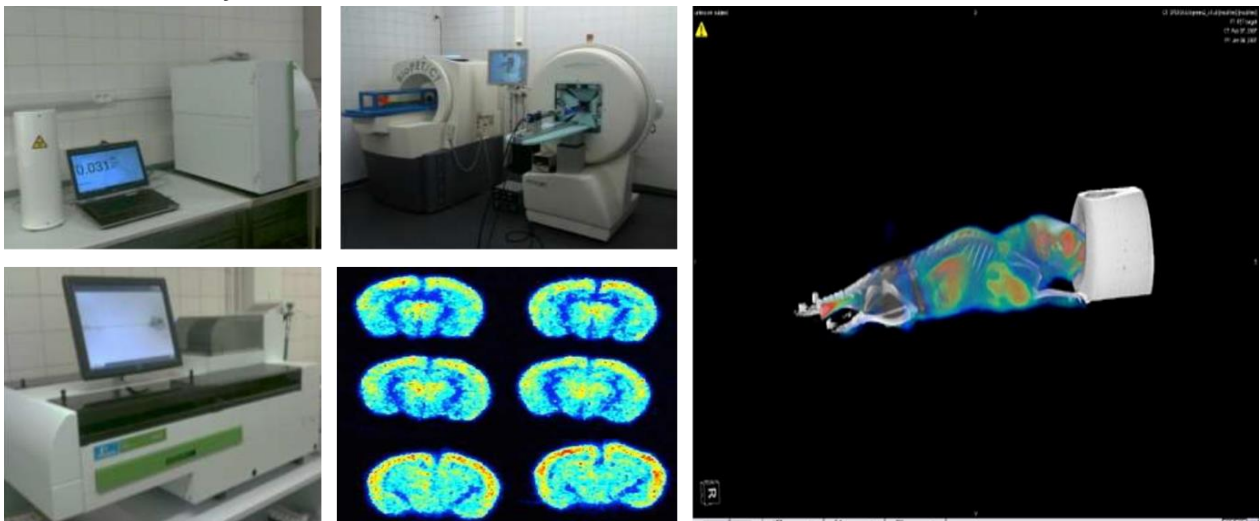


Figure 1. As part of the new animal study NeuroScientific will collect endpoints that will indicate ability of EmtinB to preserve functional activity of the brain in animal affected with the disease.

Transgenic models now dominate approaches to animal modeling of human neurodegenerative diseases, including Alzheimer's disease (AD). Transgenic modeling in AD to date has almost exclusively been pursued based on the amyloid hypothesis and has taken advantage of mutations in the amyloid precursor protein and the *presenilins that cause familial forms of AD. In contrast, NSB recognizes that many billions of dollars have been spent by many other research and development companies and institutions in developing amyloid-based strategies for AD treatments and have all been stopped due to failed trials and futility.

NSB is among the first companies to approach the Alzheimer's field from a different perspective, where functional activity of the brain and its healthy metabolism status are paramount to keeping AD progression as slow as possible. Hence, our new animal efficacy studies are based on the transgenic models that look at other aspects of the disease process such as inflammation, cell death, and not just amyloid plaque formation. Preliminary efficacy data from this study is expected early next quarter and if positive will put the Company at the forefront of "new" Alzheimer's research.

*Presenilins are a family of related multi-pass transmembrane proteins which constitute the catalytic subunits of the gamma-secretase intramembrane protease complex.



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Imaging Biomarker

Based on recommendations by the Alzheimer's Drug Discovery Foundation (ADDF), NSB is currently investigating the use of Magnetic Resonance Spectroscopy (MRS) imaging of the brain as a biomarker technique to monitor biological responses to EmtinB treatment during preclinical and future clinical studies.

A biomarker is a characteristic that can be objectively measured as an indicator of the presence or severity of a disease or condition. As well as having diagnostic applications, some biomarkers can also be used to evaluate the effect of a therapeutic intervention on disease processes. In traditional AD research the most commonly used biomarkers are based on amyloid pathology and are only applicable to those drugs that target amyloid proteins and plaques.

MRS imaging has the potential to allow real-time monitoring of changes in specific brain metabolites which correspond with progressive neurodegeneration, wherein stabilization of these brain metabolites is indicative of the effectiveness of a therapeutic response. In partnership with Charles River Laboratories, NSB is determining the translatability of this technique from preclinical application in animals to human clinical trials and if successful will be one of the first to take a non-amyloid therapeutic biomarker into the clinical phase of development.

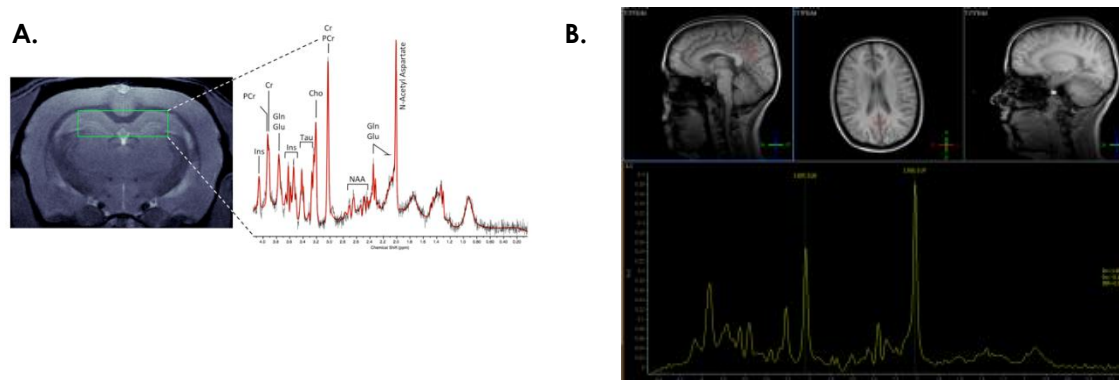


Figure 2. Representative brain metabolite profile using Magnetic Resonance Spectroscopy (MRS) imaging (A) in mice and (B) in a human

Safety and Toxicology Program

The Company is pleased to announce that the main pre-clinical safety and toxicology program of EmtinB that was started last year is progressing well and in line with company expectations to be completed next quarter. The program is being conducted by Covance in the US (one of the largest research organizations in the world) and will provide crucial data required for NSB to start Phase 1 clinical studies in humans. The Phase 1 clinical program is expected to commence later this year and the Company has started preparations towards this program.

The preparatory phase includes developing design of the study, CRO selections, establishing GMP manufacturing, building KOL (key opinion leaders) network, early stage partnering discussions to include input from potential clinical partners into this early stage clinical program, obtaining initial regulatory advice, etc.

Ophthalmology Studies

This month the Company commenced the EmtinB ophthalmology program that will include two parts: Part 1 will assess distribution of EmtinB and its ability to penetrate the retina and optic nerve. Part 2 will assess EmtinB's ability to protect the astrocytes and retinal ganglion cells from damage associated with elevated intraocular pressure, the main trigger of glaucoma disease. As part of that program the Company has



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successfully manufactured the stable labeled version of EmtinB dendrimer that will allow us to visualize tissue distribution and intracellular localization of this complex molecule not only in ophthalmology disease models but any other neurodegenerative model.

Damage to astrocytes and degeneration of neural cells are responsible for the visual loss in glaucoma. Current therapy in glaucoma is based on reducing the pressure inside the eye, since raised intraocular pressure is the major risk factor in glaucoma progression. Unfortunately, correcting the eye pressure alone does not guarantee that further loss of vision will not occur. EmtinB is modelled on a specific sequence of metallothionein-II A; a neuroprotective protein produced as part of the innate immune system and could be the breakthrough disease modifying therapy for serious eye diseases and conditions associated with vision loss. It could become the first marketable therapy with optic nerve regeneration potential that activates intracellular signal transduction pathways associated with the survival-promoting functions of neurons and glial cells.

This research program is built on more than 30 years of experience in animal based ophthalmic research that has been published in the highest ranked journals in ophthalmology. Success in this regard would be a major outcome in ophthalmology and would be a major commercial opportunity in the glaucoma field. Glaucoma pharmaceutical sales are projected to grow to \$5.3B per year worldwide during next three years.

BIO 2019 Annual Conference

NSB will attend the BIO2019 annual conference, which is being held in Philadelphia, PA USA in early June. BIO 2019 is expected to attract more than 16,000 attendees from around the world and offers unparalleled access to meet with global biotech and pharma companies. NSB's objective at the conference will be to create international awareness of our R&D successes, our unique approach towards developing Alzheimer's therapeutics and progress initial partnering and co-development opportunities.

121 Technology Investment Conference

NSB will be presenting at the 121 Technology Investment Conference in Hong Kong in mid-June to an audience of sophisticated high-net worth investors and fund managers.

About NeuroScientific Biopharmaceuticals Limited

NeuroScientific (ASX:NSB) is a company developing peptide-based pharmaceutical drugs that target a number of neurodegenerative conditions with high unmet medical demand. The company's product portfolio includes EmtinB, a therapeutic peptide initially targeting Alzheimer's disease; 15mS.A. which is being developed as a diagnostic peptide for early-stage Alzheimer's disease; and other Emtin peptides (EmtinAc, EmtinAn, and EmtinBn) which have demonstrated similar therapeutic potential as EmtinB. For more information, please visit www.neuroscientific.com

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