NeuroScientific
BIOPHARMACEUTICALS
ASX:NSB

ASX ANNOUNCEMENT
29 August 2022

NEUROSCIENTIFIC RELEASES FY2022 ANNUAL REPORT

HIGHLIGHTS

- Commenced the clinical development program for EmtinB™ prior to the end of FY22
- Received HREC approval for an Early-Phase Clinical Trial and commenced subject recruitment before the end of FY22
- Completed all preclinical safety and toxicology studies required by regulatory agencies prior to administering EmtinB™ to humans
- Significantly progressed the Multiple sclerosis R&D Program with biomarker data and highly promising preliminary proof of efficacy results in a gold standard animal model for Multiple sclerosis
- Formed strategic research partnerships with leading international research organisations Biospective Inc and Imeka, to support development of EmtinB™ as a treatment for Multiple sclerosis
- Expanded the clinical leadership team in readiness for commencing the clinical development of EmtinB™
- Expanded the Scientific Advisory Team to include key international research experts in ophthalmology and toxicology

The financial year ending June 30 2022 was a landmark period for NeuroScientific Biopharmaceuticals Ltd ("**NeuroScientific**" or "**the Company**") as the Company achieved the historic milestone of commencing the clinical development program for its lead drug candidate EmtinB™, thereby becoming a clinical-stage drug development company.

Achieving this landmark outcome involved the Company completing several important development milestones for EmtinB™, including the successful finalisation of the Preclinical Safety and Toxicology program, manufacturing of clinical-grade EmtinB™, followed by HREC approval to commence the Early-Phase Clinical Trial. NeuroScientific also expanded its Clinical Leadership Team to include a seasoned professional as Director of Clinical Development.

Since becoming a clinical-stage drug development company during FY22, NeuroScientific has completed its first major clinical milestone of first participant recruited for the Early-Phase Clinical Trial. Additionally, the Company has also submitted its application for a Phase I Clinical Trial for HREC approval. Achieving HREC approval for the Phase I Clinical Trial will signal completion of another major milestone for the Company.

The outlook for FY23 is very promising with the Company set to report on a number of clinical outcomes during the period.

Operations Review

(i) Neurology Clinical Development Program

NeuroScientific successfully transitioned its Neurology R&D Program for EmtinB™ from the preclinical stage of development to clinical development, achieving the important milestones of completing the Preclinical Safety and Toxicology Program, gaining HREC approval for its Early-Phase Clinical Trial, and the commencement of the Early-Phase Clinical Trial during the 2H of FY22.

The Preclinical Safety and Toxicology Program was undertaken to support the advancement of EmtinB™ into clinical trials as a treatment for neurodegenerative conditions, including the lead indications of Alzheimer's disease and Multiple sclerosis. The pivotal safety and toxicology studies were successfully completed to the international standard of Good Laboratory Practice (GLP), including Safety Pharmacology and Repeat-dose

Toxicology studies. Additionally, a comprehensive in vitro off-target safety assessment across >170 known targets for human toxicities demonstrated the low potential for EmtinB™ to cause adverse events in humans.

HREC approval of the Early-Phase Clinical Trial was a historic milestone for the Company and a significant step towards commercialisation of EmtinB™ as a potential disease-modifying treatment for neurodegenerative conditions. The Early-Phase Clinical Trial will involve up to 30 healthy human subjects and is an important initial component of the clinical development program for EmtinB™ as the Company seeks to develop biomarker data to indicate proof of the mechanism of activity of EmtinB™ in humans for the purpose of guiding efficacy outcomes during future clinical trials in patients. The Early-Phase Clinical Trial commenced prior to the end of FY22 and is being undertaken by Perth-based clinical research company Linear Clinical Research.

During July 2022, NeuroScientific submitted its Phase I Clinical Trial for EmtinB™ for HREC approval, involving up to 88 healthy human volunteers. Gaining HREC approval to commence the Phase I Clinical Trial will be another important achievement for the Company and significant development milestone for EmtinB™.

(ii) Significant progress in Multiple sclerosis R&D Program

NeuroScientific significantly advanced its Multiple sclerosis (MS) R&D Program throughout FY22, forming strategic research partnerships with international leading contract research companies Biospective Inc, and Imeka, the completion of inflammatory biomarker studies, and the commencement of in vivo efficacy animal studies.

During the 1H FY22, NeuroScientific partnered with Canadian contract research companies BioSpective and Imeka to support development of EmtinB™ as a potential disease modifying drug for MS. BioSpective were engaged to undertake animal studies at their state-of-the-art facilities. Imeka have developed powerful diffusion MRI imaging technology, allowing non-invasive high resolution analysis of changes to brain tissue, which will be incorporated into NeuroScientific's animal studies and future clinical studies in patients.

Preclinical biomarker studies were undertaken to investigate the effect of EmtinB™ on dysfunctional inflammatory responses associated with MS. MS is a chronic neurodegenerative disease in which abnormal immune responses attack the central nervous system (CNS). Initial outcomes demonstrated that EmtinB™ significantly reduced important MS-related biomarkers Interferon-gamma-inducible protein-10 (CXCL10/IP-10), Matrix Metalloproteinase-9 (MMP-9), Immunoglobulin G (IgG), and decreased Th1-mediated cell proliferation. These results were the first indicative data that EmtinB™ potentially modulates immune responses outside of the brain (peripheral immune responses). This was confirmed in follow up biomarker studies during the 2H FY22, in which EmtinB™ significantly reduced key drivers of chronic inflammation and autoimmune diseases, interleukins (IL)-17A, IL-17F. and IL-6.

Armed with impressive inflammatory biomarker outcomes, the MS R&D Program progressed to proof of efficacy animal studies, conducted by research partner BioSpective in industry gold-standard models of MS, during 2H FY22. In June 2022, the Company reported highly promising preliminary results in the myelin oligodendrocyte glycoprotein-induced experimental autoimmune encephalomyelitis (MOG-EAE) mouse model, the gold-standard model of the earlier inflammatory stage of MS (relapse-remitting MS), which informed the selection of the most effective doses (10mg/kg and 20mg/kg) for further validation in a larger study to be completed during 1H FY23.

(iii) Ophthalmology R&D Program

Throughout FY22, the core focus of ophthalmology R&D involved preclinical safety and toxicology studies to support advancing EmtinB™ into clinical development for ocular indications, such as glaucoma. The Company completed a number of pivotal studies, including a 4-week Ocular Safety and Tolerance study in non-human primates (NHPs) involving weekly ocular administrations of EmtinB™, and a 13-week Ocular Toxicity study in NHPs.

Both studies assessed multiple doses of EmtinB™ up to 3x the estimated effective dose in humans and were undertaken in the leading gold-standard model for ocular toxicity. The 4-week Ocular Tolerance study, which assessed an exaggerated dosing regimen of weekly administrations of EmtinB™, reported no evidence of

abnormal adverse effects associated with EmtinB™. The safety outcomes from the 13-week Ocular Toxicity study will be reported during the 1H FY23 and will be a major de-risking event for the Ophthalmology R&D Program due to the duration of the study being the longest to be undertaken by the Company to date in assessing ocular safety of EmtinB™.

(iv) Senior Executive and Management appointments

In-line with its transition from a preclinical to a clinical drug development company, NeuroScientific expanded its clinical leadership team in the 2H FY22.

Dougal Thring was appointed to the role of Chief Operating Officer (COO), having previously been appointed as Vice President of Clinical Development in March 2021. In the new senior management position of COO, Dougal oversees all aspects of nonclinical and clinical research and development activities. Simon Scott was appointed as Director of Clinical Development in April 2022. Simon brings more than 15 years' of clinical research experience, having held senior management positions with Linear Clinical Research in Perth.

(v) Expansion of Scientific Advisory Team

NeuroScientific appointed two key international drug development experts to its Scientific Advisory Team with the addition of highly experienced clinical ophthalmologist Dr Peter Hnik MD MHSc and ex-Sanofi toxicologist Dr Frank Bonner PhD FBTS. Both Dr Hnik and Dr Bonner bring considerable drug development experience to NeuroScientific and have provided invaluable supporting guidance regarding the advancement of EmtinB™ into clinical development during FY22.

Financial Review

(i) Financial position

The financial results for FY2022 reflect the continued advancement of the Company's lead drug candidate EmtinB™ from preclinical to clinical development as a potential disease modifying treatment for Alzheimer's disease, Multiple sclerosis, and glaucoma.

NeuroScientific reports a net after-tax loss for the year ended 30 June 2022 of $10,453,349 (30 June 2021: $3,177,831). Research and development expenditure was significantly higher during the period at $7,220,141 (30 June 2021: $2,217,944) predominantly driven by preclinical studies and manufacturing activities to support the commencement of clinical trials during 2H FY22.

At 30 June 2022 the Company had a cash and cash equivalents balance of $7,216,048 (30 June 2021: $14,162,247) and Net Assets of $7,737,335 (30 June 2021: $14,827,443).

Outlook for FY2023

NeuroScientific achieved multiple landmark milestones during FY2022 and the Company is primed to capitalise on these successes in FY2023:

Neurology Clinical Development Program

In July 2022, NeuroScientific submitted for HREC approval to commence its planned Phase I Clinical Trial for EmtinB™. The Phase I Clinical Trial will seek to establish the safety profile, pharmacokinetics and pharmacodynamics of EmtinB™ in up to 88 healthy adult volunteers. Achieving HREC approval to commence the Phase I Clinical Trial will be another important development milestone for EmtinB™.

Subject to HREC approval to commence the Phase I Clinical Trial in the near term, the Company expects to begin subject recruitment and report the first subject dosed during 1H FY2023.

Additionally, NeuroScientific expects to report outcomes from its Early-Phase Clinical Trial in 1H FY23.

Multiple sclerosis R&D Program

In the coming months, NeuroScientific will report preliminary results from proof of efficacy studies in a gold standard animal model of demyelinating MS, which represents the advanced progressive stage of MS. If the preliminary results are positive, a larger study will be scheduled for 1H FY23. It should be noted that there is currently a lack of treatment options for patients with primary progressive MS and positive results for EmtinB™ in this animal model will be important for investigating the potential for EmtinB™ in addressing one of the biggest unmet medical needs for MS patients.

NeuroScientific also expects to report outcomes from the large-scale MOG-EAE MS animal study during 1H FY23.

Successful completion of these studies will support the advancement of EmtinB™ into future Phase II Clinical Trials in MS patients.

Ophthalmology R&D Program

The Company will also continue to progress its Ophthalmology R&D Program for EmtinB™ and expects to report results from important preclinical 13-week Ocular Toxicity studies during the 1H FY23.

As previously mentioned in the Operational Review section above, the safety outcomes from the 13-week Ocular Toxicity studies will be a major de-risking event for the Ophthalmology R&D Program due to the duration of the study being the longest to be undertaken by the Company to date in assessing ocular safety of EmtinB™.

This announcement is authorised by the Board of NeuroScientific Biopharmaceuticals Ltd.

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About NeuroScientific Biopharmaceuticals Ltd

NeuroScientific Biopharmaceuticals Limited (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 and glaucoma, as well as other Emtin peptides (EmtinAc, EmtinAn, and EmtinBn) which have demonstrated similar therapeutic potential as EmtinB™. For more information, please visit www.neuroscientific.com

About EmtinB™

EmtinB™ is a peptide-based compound that binds to surface-based cell receptors from the LDLR family, activating intracellular signalling pathways that stimulate neuroprotection, neuroregeneration and modulate neuroinflammation. EmtinB™ is modelled on a specific active domain of the complex human protein called Metallothionein-IIA, which is produced as part of the human body's innate immune response to cell injury.

Our preclinical research has established that EmtinB™ is highly specific and selective for its target receptor, safe and well tolerated at high concentrations, and is able to penetrate the blood brain barrier. A series of Phase I clinical studies will be conducted to establish the safety profile of EmtinB™ in humans.