



ASX ANNOUNCEMENT

Full report from Multiple Sclerosis study: EmtinB significantly increased survival of neuronal cells, axonal regeneration and remyelination in comparison to Copaxone®

Perth, Australia; 4 August 2020. NeuroScientific Biopharmaceuticals Ltd ASX: NSB ("NeuroScientific" or "the Company") is pleased to announce it has received the Final Report from the recently completed preclinical study of its lead compound EmtinB in an *in vitro* Multiple sclerosis (MS) model, in which EmtinB was compared against the leading marketed drug Copaxone®. The study was conducted by independent contract research organisation Neuron Experts, France.

MS is a chronic, disabling neurodegenerative disease that results from the loss of the myelin sheath that surrounds nerve cell axons. Myelin protects and insulates nerve cell axons and is essential for normal cognitive, sensory, and motor function. The loss of myelin leads to the deterioration of nerve cells. Copaxone® is a leading therapeutic treatment for MS that generates peak sales revenue of approximately US\$4 billion.

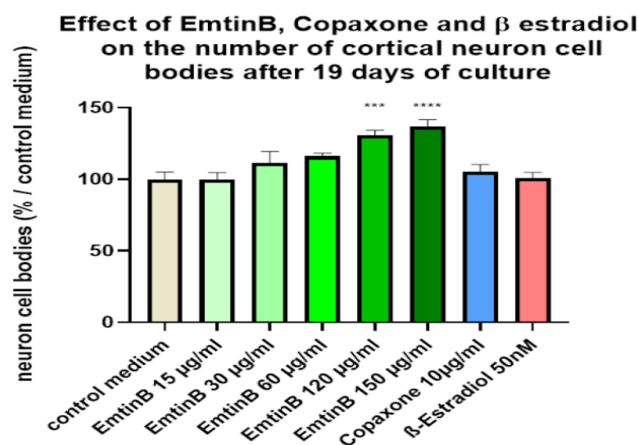
In addition to the preliminary results detailed in the previous announcement on 14 July 2020 in which EmtinB had a significant effect on increasing the myelination of neuronal cell axons, the study also evaluated the effect of EmtinB treatment on:

- the survival of neuronal cells; and
- axonal regeneration (neurite length).

In the previous announcement of the preliminary results on 14 July 2020, EmtinB significantly **increased myelin formation** at concentrations 30µg/ml ($p<0.05$), 60µg/ml ($p<0.01$), 120 µg/ml ($p<0.001$), and 150µg/ml ($p<0.0001$). Additionally, EmtinB increased myelin formation by >30% at 150µg/ml concentration and >25% at 120µg/ml in comparison to Copaxone®.

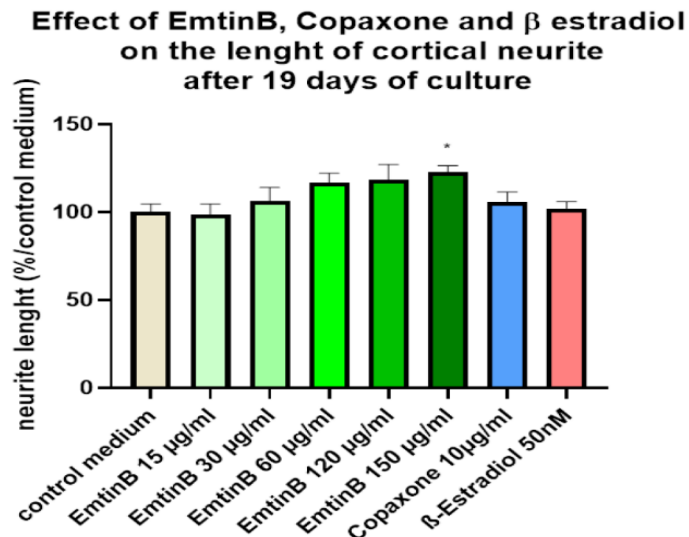
The study also demonstrated that EmtinB treatment significantly **increased cell survival** at doses 120µg/ml ($p<0.001$) and 150µg/ml ($p<0.0001$). Conversely, Copaxone® had no significant effect on cell survival (**Figure 1**).

Figure 1: Effect of EmtinB on survival of neurons in Multiple sclerosis model



EmtinB treatment also **increased axonal regeneration** at doses 60µg/ml (117%), 120µg/ml (118%) and 150µg/ml (123%; p<0.05). Copaxone® had no effect on axonal regeneration (**Figure 2**).

Figure 2: Effect of EmtinB on axonal regeneration in Multiple sclerosis model



"This positive data is significantly indicative of the disease modifying potential of EmtinB as a treatment for Multiple Sclerosis", commented Matthew Liddelow, CEO and Managing Director of NeuroScientific Biopharmaceuticals. "Validation of the positive effect of EmtinB treatment of nerve cell survival, regeneration and remyelination means EmtinB has the potential to be a highly effective treatment for this severe chronic disease."

About NeuroScientific Biopharmaceuticals Limited

NeuroScientific Biopharmaceuticals (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

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Announcement authorised by the Board of Directors of NeuroScientific Biopharmaceuticals

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