CEREBROLYSIN™ TREATMENT EFFECTS IN NEUROTROPHIC FACTOR CASCADES IN A TRANSGENIC MODEL OF ALZHEIMER’S DISEASE

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Alzheimer's disease (AD) is characterized by neurodegeneration of selected neuronal populations in the neocortex, hippocampus and nucleus basalis accompanied by the formation of amyloid plaques and tangles. Amyloid beta protein is the proteolytic product of APP metabolism. Progressive accumulation of Abeta results in the formation of toxic oligomers that damage synapses and selected neuronal groups. The mechanisms leading to neuronal damage by the Abeta oligomers is under investigation. Several studies suggest that deficient transport or expression of neurotrophic factors (NTF) (eg, NGF, BDNF) and their receptors might be involved. We have previously shown that treatment with Cerebrolysin™ from EVER NeuroPharma reduces the behavioral deficits and neuropathological alterations in APP tg mice. The neuroprotective effects of the Cerebrolysin™ might involve different mechanisms including signaling regulation, control of APP metabolism and anti-apoptotic effects. However the detailed molecular mechanisms for these effects and the potential role regulating NTFs is unclear. Previous studies have suggested that the neurotrophic effects of Cerebrolysin™ might have NGF-like effects because of the ability to rescue neurodegeneration in fimbria fornix lesioned animals and in vitro in neuronal cell lines. However, it is unclear if in APP tg model of AD, Cerebrolysin™ might regulate the expression of NTFs and the relationship with neuroprotection and Abeta oligomers levels.

This is of importance because it will provide new clues as to the mechanisms of action of Cerebrolysin™ and its long term beneficial effects.