Biology and Mode of Action of Novel Neurotrophic Factors CDNF and MANF

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Country

Finland

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Biology and Mode of Action of Novel Neurotrophic Factors CDNF and MANF

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4

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Research Abstract

We have discovered a novel cerebral dopamine neurotrophic factor (CDNF) that together with homologous MANF forms a novel family of neurotrophic factors (NTF). In vivo, CDNF protects and repairs dopamine (DA) neurons in a rat and mouse model of Parkinson’s disease (PD) better than any other NTF. Our behavioural data show that CDNF is more effective than GDNF in treating motor symptoms in rhesus monkey models of PD. We now plan to study CDNF and MANF mechanism of action and evaluate their biology and clinical potential. We search for CDNF-MANF binding proteins and cell surface receptors. Our current results allow to postulate that CDNF and MANF are key regulators of ER stress and of the unfolded protein response

(UPR). To study in vivo roles of CDNF and MANF we have developed respective knockout (KO) and conditional knockout (cKO) mice. Using these mutants and mice overexpressing MANF we will test their role in the development, maintenance and pathology of midbrain DA neurons.

Further information available at:

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Investments < €500k

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