

Neuroprotective microRNAs, trophic factors and ER stress in adult dopaminergic neurons: significance for Parkinson's disease

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Research Abstract

Cells in our body use the information encoded in the DNA to direct protein synthesis. This process is carefully controlled by many molecules including microRNAs that regulate the levels of specific proteins. The microRNAs are extremely important for normal cellular functions. For example, when we, using genetic manipulations, ablated all microRNAs in dopaminergic neurons, these neurons rapidly degenerated. Similar degeneration of this neuronal population

also occurs in Parkinson's disease patients. Neurotrophic factor proteins can support and protect neurons, but the mechanism of their action is not yet fully understood. We believe that particular microRNAs mediate the protective functions of neurotrophic factors. In this project we aim to identify specific neurotrophic factor induced microRNAs that are essential for neuronal survival and are able to prevent the degeneration of dopaminergic neurons. This work may lead to the development of novel therapies to treat Parkinson's disease.

Further information available at:

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Finland

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