

Scientists discover nerve growth factor with therapeutic potential in Parkinson's disease

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Scientists in the Academy of Finland's Neuroscience Research Programme have reported promising new results with potential implications for the treatment of Parkinson's disease. They have been studying the impacts of nerve growth factors in the treatment of PD, and their latest results show that a certain growth factor can be used to halt the progress of damage brought on by a nerve poison and possibly even restore the function of damaged cells.

The studies on nerve growth factors used an experimental PD model in rats. Administration of the growth factor reduced motor disturbances in rats.

The severe motor disturbances that are seen in PD are caused by the slow degeneration of dopamine nerves in the brain. There are treatments that alleviate the symptoms of the disease, such as hand tremor, but they do not prevent or halt the degeneration of [nerve cells](#). The nerve growth factors studied to date have slowed nerve [cell degeneration](#) to some extent, but they have had only limited therapeutic effect. Several known nerve growth factors, such as GDNF, also attach to extracellular tissue, possibly deterring their movement to nerve cells that require treatment.

Working under the supervision of Academy Professor Mart Saarma, scientists at the University of Helsinki Institute of Biotechnology have now been investigating two new [nerve growth](#) factors. MANF (mesencephalic astrocyte-derived neurotrophic factor) is released from glial cells in the midbrain and is a member of the same growth factor

family as CDFN, another growth factor that Saarma's team have investigated. A University of Helsinki team led by Professor Raimo K. Tuominen discovered that in the experimental PD model, MANF and CDFN injections into the brain prevented dopamine nerve destruction caused by nerve poison and to some extent even restored the function of damaged cells in rats.

The latest results suggest that MANF spreads more readily in [brain tissue](#) than other known growth factors. This may be a highly significant finding in respect to the development of growth factor therapy for PD.

The results are published in the 29 July issue of the *Journal of Neuroscience*.

Source: Academy of Finland

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