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Use of Pleiotrophin to Promote Neurogeneration

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Field
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AREAS OF APPLICATION

- Methodology for preventing or reducing neurodegeneration in a patient with a neurodegenerative disorder
- Provides a methodology for restoring nervous system function in patients suffering from, or at risk for, neurodegenerative disorders
- Provides a method for promoting neuron graft survival in a patient with a neurodegenerative disease such as Parkinson's, Huntington's, Alzheimer's, etc.

ADVANTAGES

- Includes various methodologies for infusing pleiotrophin into the brains of patients suffering from neurodegenerative disorders
- Wide variety of biologic sources can be used to express and isolate pleiotrophin polypeptides for human patient administration of therapies
- Invention does not require the exclusive use of native pleiotrophin polypeptide
- Variety of transport agents can be used for the delivery of the pleiotrophin gene

THE TECHNOLOGY

The invention provides a method for administering an amount of a pleiotrophin composite to promote the survival of a neuron graft. The composition containing pleiotrophin may be administered to the patient before, during or following a graft. This invention also provides a method for administering an amount of a pleiotrophin or pleiotrophin analogs that is suitable to prevent or reduce neurodegeneration as well as a method for restoring the nervous system e.g. promoting neuroregeneration by administering a suitable amount of a pleiotrophin composition.

In some embodiments of the invention, neurons of the nigrostriatal system are biological targets for the methods described herein. In other embodiments, the tissues or regions of the brain to which pleiotrophin is administered or targeted include the cerebrum, striatum, substantia nigra, cortex, cerebellum, hippocampus, basal forebrain, basal ganglia, and spinal cord.

Lastly, the methods of the invention include the administration of pleiotrophin polypeptides and/or polynucleotides encoding pleiotrophin. In addition, pleiotrophin may be administered along with other beneficial compositions, including neurotrophic factors, In a particular embodiment of the invention, the trophic factor is glial cell line-derived neurotrophic factor (GDNF).

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