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Neural Lineage Markers

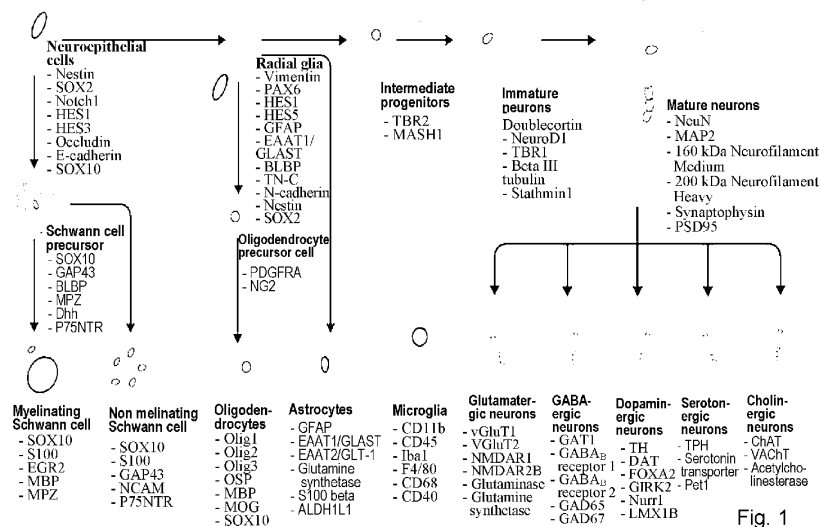


Fig. 1

(57) Abstract: Disclosed are novel strategies for the treatment of patients with Parkinson's disease and other secondary Parkinsonian disorders. Disclosed are DA neuronal cells that have been modified in vitro with a genetic insertion of GDNF. The GDNF coding sequence is inserted under the transcriptional control of a promotor such that secreted proteins are made and taken up by the endogenous cells after the administered engineered cells have matured to a Neuronal Mature Cell Type to promote survival of endogenous neurons. Also disclosed are DA neuronal cells that have been modified with a genetic insertion of GBA in vitro and are hemizygous null for SNCA. The GBA coding sequence is inserted under the transcriptional control of a ubiquitous promotor and the secreted proteins are made and taken up by the graft and endogenous cells immediately upon transplantation to promote long-term graft integrity.

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