

Transplantation of human iPS cells generate dopamine neurons and reduce the behaviour impairment in rat model of Parkinson's disease

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Parkinson's disease (PD) is a common neurodegenerative disorder characterized by the classical motor symptoms of bradykinesia, rigidity and tremor. Parkinson's disease involves the selective loss of midbrain dopamine (mDA) neurons and is possible target disease for stem-cell based therapy. The success of this approach greatly depends on the finding of an abundant source of cells capable of mDA ergic function in the brain. Human induced pluripotent stem cells (hiPS) offer high advantage than human embryonic stem cell (hES). The somatic cells are reprogrammed by a set of transcription factors to induced pluripotent stem cells (hiPS) We report on mDA neurons can be synthesized from the available hiPS cell line . These cells express all the markers follow the sure mDA lineage pathway and have similar expression levels of DA and DOPAC. It is also noted the changes of the transplanted hiPS mDA progenitor cells into 6- OHDA lesioned PD rats; they survive long term and differentiated into dopaminergic neurons. The behavior impairment also significantly modified in this study.

Selecting the appropriate population of mDA lineage cells and removing actively dividing hips cells before transplantation is a critical problem which is important for the success of therapy for PD

Biography

Dr.M.Sabesan has completed his PhD from Bharathidasan university, Tiruchirapalli, India, and post graduate training in Bermuda biological station and Freiburg University ,Freiburg Germany from Neuroanatomy lab. He has published more than 25 papers in reputed journals and completed two major research projects in neurodegenerative diseases. He has been awarded Indo –DAAD fellowship to visit neuroscience lab at Germany. He has guided 7PhD students. He is the member of subject expert for funding research projects

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