MESENCHYMAL STEM CELLS- OBTAINING SOURCE FOR FUNCTIONAL NEURONAL CELLS

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SUMMARY

Neurodegenerative diseases are characterized by the gradual and progressive deterioration or loss of the nerve cells and neural tissue. The well known disorders are Alzheimer's disease, Parkinson disease and Multiple sclerosis. Neurodegenerative disorders are estimated to affect over 22 million people worldwide. Some symptomatic treatments have become available during the last 15 years, but there is still no cure for these debilitating disorders. Multiple sclerosis produces the gradual destruction of the brain and spinal cord neurons protective myelin layer with progression towards irreversible clinical disability. It is estimated that over 2,5 million people around the world are affected by Multiple sclerosis. This number includes 10000 people living in Romania. Cell replacement strategies have a particular interest for Multiple sclerosis, because the adult mammalian brain and the spinal cord have a limited capacity for self-repair. Stem cells from embryonic and fetal sources have been reported to generate neuronal cells that could be used to replace the lost neurons. Placental mesenchymal stem cells are multiplicated in vitro, after that the differentiation of the neuronal progenitors is induced with specific media. The placental mesenchymal stem cells originated neurons ability to move throughout the brain and spinal cord to sites of the sclerotic tissue damage and promote repair of nerve-insulating myelin will be evaluated by clinical and histological exams of the nervous tissue.