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Poster Presentation

Differentiation of Bone Marrow Stem Cells (BMSC) to Neurosphere Using Bioactive Substance ATC

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Abstract

Generation neural stem cells from neurosphere-derived bone marrow stem cells using bioactive substance ATC. Bone marrow cells (BMSCs) were isolated from rat. BMSCs cultured by DMEM/F12 medium supplemented with 10% fetal bovine serum. These cells evaluated by specific markers of BMSCs such as bioactive substance ATC, B27. Then BMSCs differentiated into neurosphere and divided into two groups which were evaluated morphologically. Diameter and number of this neurosphere evaluated daily. BMSCs markers were measured by immunocytochemistry that expressed, CD 90 (75%) CD 44 (60%) fibronectin. Diameter and number of Neurosphere by 0.1 ng/ml was optimal dose for expansion. Then these cells evaluated by neuroectodermal markers such as nestin and NF 68, NF 200 and NF160, that expressed >80% and this data approved by RT-PCR assay. This study develops a simplified, efficient, and nontoxic approach by lowest factors which derives a large number of neurospheres from BMSCs. With our newly devised approach 10 to 15 passage cells were used for in vitro differentiation. Neuronal differentiation was induced by incubation of the BMSCs with bioactive substance (ATC) induction media.

Keywords: Bone Marrow Cells, Bioactive Substance ATC, Cell Therapy.

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