

yield of oligodendrocyte like cells was about 82% using O1, O4 ,oligo2 and MBP to characterized the oligodendrocyte-like cell. The expression of MOG and PDGFR- α in oligodendrocyte like cells, 6 day after treatment.

Conclusion: we demonstrated that neurospheres derived BMSCs could be differentiated into neural stem cells then oligodendrocyte like cells in the presence of heregulin, bFGF,PDGF and T₃.

Keywords: neural stem cell, Bone marrow stem cell, Oligodendrocyte-like cell



Expression of PDGF- α in Mature oligodendrocytes induced by triiodothyronine from BMSCs

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Introduction: This study examined the maturation of oligodendrocyte derived from transdifferentiation of adult rat BMSCs into oligodendrocyte like cells using triiodothyronine as inducer by evaluating the expression of PDGF- α and MBP.

Methods: BMSCs were isolated from female sprague-dawley rats. BMSCs were evaluated for different markers such as fibronectin, CD106, CD90, Oct4 and CD45. Oligodendrocyte-like cells transdifferentiated from BMSCs by exposure of BMSCs to DMSO and RA at the preinduction stage and then induced by heregulin, PDGF-AA, bFGF, and T₃. The neuroprogenitor cells were evaluated for nestin and *neurofilament 68*(NF68) gene expression using RT-PCR. Oligodendrocyte like-cells were assessed by immunocytochemistry for O1, O4, oligo2, GFAP, nestin , NF68, MBP and 160 markers. Gene expression of olig2 and PDGFR- α were examined by RT-PCR technique.

Results: Our results showed that the fibronectin, CD106, CD90, CD45 and Oct-4 after 4th passage were expressed. Also, the yield of oligodendrocyte-like cells differentiation was about 71% using of O1, O4 and oligo2 markers. Likewise the expression of MBP and PDGFR- α was detected in oligodendrocyte-like cells, after 6 days of the induction.

Conclusion: In this study, we were able to transdifferentiate the BMSCs into mature oligodendrocyte-like cells.

Keywords: BMSCs, Oligodendrocyte like cells, induction, differentiation.

