EuroSciCon

15th Edition of EuroSciCon Conference on

Advanced Stem Cell & Regenerative Medicine

December 03-04, 2018
Valencia, Spain

J Stem Cell Biol Transplant 2018, Volume 2
DOI: 10.21767/2575-7725-C1-003

# Dental germs and palatal connective tissue stem cells: tools for oral regenerative therapy

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**Dental pulp, periodontal ligament, dental follicle, apical papilla, oral mucosa, periodontal granulation tissue, palatal tissue is considered easily accessible and important sources of mesenchymal stem cell (MSCs). In the current study, we isolated and assessed human dental germs and palatal connective tissue stem cells. MSCs were obtained from dental germs of wisdom teeth and palatal tissue samples were used from clinically healthy patients undergoing intervention due to the absence of space required for the eruption. After isolation the cells were cultured in propagation medium. Cells morphology, colony forming efficiency, population doubling capacities and multilineage differentiation potentials were investigated. After 1st passage, both cell lines possessed fibroblast like morphology, the frequency of colony forming efficiency for dental germs derived mesenchymal stem cells (dgMSCs) was significantly higher than that of palatal connective tissue derived mesenchymal stem cells (pMSCs). Significantly higher population doubling time was recorded for dgMSCs. The specific antigen makeup of the isolated MSCs were characterized in the 4th passage using a FACSCanto II flow cytometer (BD Biosciences, San Jose, CA, USA) and analyzed using the DIVA program. Both cell lines were positive for CD105, CD73, CD90, CD44, and CD49f and negative for CD34, CD45, and HLA-DR, but the levels of expression showed small differences. MSCs from both cell lines were successfully differentiated into osteogenic, adipogenic and chondrogenic lineages. Our preliminary results suggest that isolation, identification and immuno phenotyping of dgMSCs and pMSCs are feasible and may represent an easily available source for oral regenerative therapies.**

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