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A new source of pluripotent-like stem cells DPPSC

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Dental pulp is particularly interesting in regenerative medicine because of the accessibility and differentiation potential of the tissue. Dental pulp has an early developmental origin with multi-lineage differentiation potential due to its development during childhood and adolescence. However, no study has previously identified the presence of stem cell populations with embryonic-like phenotypes in human dental pulp from the third molar. In the present work, we describe a new population of pluripotent-like stem cells (DPPSCs) that were isolated from the dental pulp by culture in media containing LIF, EGF and PDGF. These cells are SSEA4⁺, OCT3/4⁺, NANOG⁺, SOX2⁺, LIN28⁺, CD13⁺, CD105⁺, CD34⁺, CD45⁺, CD90⁺, CD29⁺, CD73⁺, STRO1⁺ and CD146. We examined the capacity of DPPSCs to differentiate *in vitro* into tissues that have similar characteristics to mesoderm, endoderm and ectoderm layers in 3D cultures. We performed a comparative RT-PCR analysis of *GATA4*, *GATA6*, *MIXL1*, *NANOG*, *OCT3/4*, *SOX1*. DPPSCs can be derived from healthy human molars from patients of different sexes and ages, they represent an easily accessible source of stem cells, which opens a range of new possibilities for regenerative medicine

Biography

L. Giner-Tarrida. MD, DDS, PhD. Is a stomatologist, graduated in 1979 from the Universitat autonoma de Barcelona. Since 2009, he became the director of the laboratory of regenerative medicine at Universitat Internacional de Catalunya, Barcelona Spain. Dr. Giner started his research career as a doctorate fellow in medicine, actually studying the cell biology of dental pulp tissue. Dr. Giner and his research group discovered a new stem cell populations called DPPSC with embryonic-like phenotypes in human dental pulp from the third molar. Dr. Giner and Dr. Atari continued their quest of scientific discovery at the same university developing methods that target and characterize, genetically of DPPSC

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