

## Molecular and immunophenotypic characterization of isolated human articular bursal tissue- Derived stem cells

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Bursae are fluid-filled cavities located at tissue sites where tendons or muscles pass over bone prominences near joints. Their function is to facilitate movement and reduce friction between moving parts. There is no attempt to identify stem/progenitor cells within articular bursal tissue (BT-). The aim of this study was to isolate and extensively characterize BT-SCs from bursitis cases. For this purpose, proliferation capacity, phenotypic properties, differentiation characteristics and gene expression profiles were analyzed and compared with mesenchymal stem cells from bone marrow (BM-MSCs) of the human. Stem cells isolated from BT and BM were analyzed by flow cytometry (FACSCalibur, BD Biosciences, and San Diego-USA), Real Time-PCR, and immunocytochemistry. Both cell lines were directionally differentiated towards adipogenic, osteogenic and neurogenic cell lineages. hBT-SCs were isolated successfully and together with hBM-MSCs, they were shown to express CD10, CD13, CD29, CD44, CD73, CD90, CD166 and HLA-A, B, C, but not CD3, CD7, CD8, CD11b, CD14, CD15, CD19, CD33, CD34, CD45, CD106, CD117 and HLA-DR. hBT-SCs expressed some of neurogenic markers (BDNF, Map2ab, GFAP, CTNF, nestin) without any stimulation towards differentiation under basal conditions. The differentiation potential of BT-SCs to neurogenic and adipogenic was shown. This study indicated that BT-SCs are promising sources for clinical use due to their high proliferation ability and capability towards differentiation into multiple cell types. Bursal tissue might provide an alternative source for human SCs. BT-SCs and possible clinical use could be developed for neurodegenerative diseases in the future.

### Biography

Adem Aydin was graduated from Kocaeli University medical school in 2002 and completed department of orthopedics and traumatology at the same university in 2008. He works Seka State Hospital as an Orthopedician. He has published more than 10 articles. He is also a Board member of Turkish Orthopedics and Traumatology Association.

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