

Identification of adipogenesis and osteogenesis pathways of differentiated bone marrow stem cells in vitro in rabbits

ABSTRACT

Transdifferentiation is a process whereby a cell type committed to and progressing along a specific developmental lineage switches into another cell types. The objective of this study was to assess whether rabbit mesenchymal stem cells (rMSCs) precommitted to give mesenchymal cell lineage transdifferentiate in response to inductive extracellular cues to expand adult MSCs. Bone mesenchymal stem cells (BMSCs) obtained from ilium of adult male rabbit comprised heterogeneous groups of cells after seeding and growing in culture plates. After initial plating, the adherent cells exhibited small rounded, spindle-shaped and exhibited fibroblast-like morphology in reaching confluence. Rabbit BMSCs differentiated into adipocytes and osteocyte as a accumulation of intracellular lipid droplets and calcium deposition throughout the culture after 21 days.

Keyword: Adipogenesis; Osteogenesis; MSC