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Multipotent adult progenitor cells (rMAPCs): The imaging of cell differentiation and the influence of nanostructured and functionalized surfaces

Multipotent adult progenitor cells (MAPCs), characterized by Verfaillies et al. in 2002, are a subpopulation of mesenchymal stem cells. MAPCs can be expanded for > 120 population doublings. They proliferate without obvious signs of senescence. These cells, isolated from human or rodent bone marrow, have the capability to differentiate into most of the mesodermal cell types, neuroectoderm-like and hepatocyte-like cells. Mouse (m)MAPCs can also be injected in blastocysts and contribute to most somatic cell lineages, even to cell types of the brain.