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Human Mesenchymal Stem Cells as a Potential Source for Cell Therapy in Liver Disorders

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Abstract : Orthotropic liver transplantation (OLT) is the final procedure of both end stage and metabolic liver diseases. Hepatocyte transplantation is an alternative for OLT, but the sources of hepatocytes are limited. Bone marrow mesenchymal stem cells (BM-MSCs) can differentiate into hepatocyte-like cells and are a potential alternative source for hepatocytes. The MSCs from bone marrow are a promising target population as they are capable of differentiating along multiple lineages and, at least in vitro, have significant expansion capability. MSCs from bone marrow may have the potential to differentiate in vitro and in vivo into hepatocytes. Our study examined whether mesenchymal stem cells (MSCs), which are stem cells originated from human bone marrow, are able to differentiate into functional hepatocyte-like cells in vitro. Our aim was to investigate the differentiation potential of BM-MSCs into hepatocyte-like cells. Adult stem cell therapy could solve the problem of degenerative disorders, including liver disease.

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