

Hepatic stellate cells stimulate liver regeneration after partial hepatectomy under inhibition of hepatocyte proliferation

Titova A., Burganova G., Sharipova E., Pevnev G., Mavlikeev M., Gazizov I., Galyavieva A., Shafigullina A., Kaligin M., Titova M., Gumerova A., Kiassov A.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Most of the fundamental studies in the field of developing new methods for treating liver diseases in regenerative medicine are performed with haematopoietic and mesenchymal stem cells. At the same time more and more importance is gaining need for finding new approaches enabling stimulation of regional stem cell compartment and using regional stem cells which are possibly represented by hepatic stellate cells. But studies aimed at their transplantation are rare. Previously, we have established the possibility of these cells to differentiate into hepatocytes after transplantation to rats with partial hepatectomy. In our present research we studied liver regeneration after transplantation of hepatic stellate cells on partial hepatectomy with 2-acetylaminofluorene damage model in rats. 2-acetylaminofluorene blocks hepatocyte proliferation. Results of study confirmed that hepatic stellate cells have the ability to differentiate into hepatocyte and stimulate it's regeneration without the threat of fibrosis after transplantation in rats with partial hepatectomy and administration of 2-acetylaminofluorene.

Keywords

Differentiation, Hepatic stellate cell, Liver, Regeneration, Stem cells, Transplantation