

## Native and Activated Hepatic Stellate Cells Stimulate Liver Regeneration In Rats After Partial Hepatectomy and 2-Acetylaminofluorene Injection

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**Abstract** One the current challenges of modern hepatology is to find new approaches to stimulate liver regeneration and to find new methods for liver diseases treatment. Cell therapies, which are based on using regional stem cells for disease treatment, are under active development. However, studies, devoted to their transplantation, are currently scarce. In recent years hepatic stellate cells are considered to be hepatic stem cells. It is known that activated hepatic stellate cells can transdifferentiate into myofibroblasts and lead to liver fibrosis. The aim of our work was to study the influence of native and activated hepatic stellate cells *in vivo* by lead nitrate injection after transplantation into partial hepatectomized rats, which is considered to be a classical model to study liver regeneration. Injection of 2-acetylaminofluorene (AAF), that selectively eliminates hepatocytes proliferation,

was used to understand the hepatic stellate cells role in liver regeneration process better.

Our results suggest that transplanted native and activated hepatic stellate cells can differentiate into hepatocyte-like cells and positively influence liver regeneration without inducing liver fibrosis.

**Key words** hepatic stellate cells, liver regeneration, partial hepatectomy, 2-acetylaminofluorene

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