

## Effect of Adenoviral Transduction of Hepatic Stellate Cells with Adv5-optHGF-RFP on their Phenotype

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### Abstract

© 2016, Springer Science+Business Media New York. Adenovirus is a promising gene delivery vector that has a high efficiency and relative simplicity of construction. These advantages make this system attractive for diverse research applications. In this project we transduced hepatic stellate cells (HSC) with adenoviral vector containing genes of hepatocytes growth factor (HGF) and red fluorescent protein (RFP) as a reporter (Adv5-optHGF-RFP), which let us to visualize the transduced cells. Further changes of phenotype were studied by real-time PCR and immunocytochemical staining. According to our results, most of the cells were transduced and demonstrated stable expression of RFP. Effectiveness of the transduction was also confirmed by a high expression of HGF (1200 times higher than in control HSC culture). Adenoviral transduction of HSC with HGF gene did not change their morphology, but stimulated expression of HSC marker desmin, leading to HSC activation ( $\alpha$ -smooth muscle actin) and appearance of  $\alpha$ -fetoprotein, one of the hepatoblasts markers. During the entire experiment, there were Ki-67+ cells, meaning that proliferation of transduced HSC was not affected. Thus, adenoviral transduction of HSC with Adv5-optHGF-RFP is a good gene delivery system with a stimulating effect on HSC.

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### Keywords

Adenovirus, Differentiation, Hepatic stellate cells, Transduction

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