



# Hepatocyte growth factor upregulates nexilin gene expression in cardiomyocytes via JNK pathway

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Genet. Mol. Res. 13 (3): 4976-4982 (2014)

Received May 28, 2013

Accepted November 2, 2013

Published July 4, 2014

DOI <http://dx.doi.org/10.4238/2014.July.4.12>

**ABSTRACT.** Hepatocyte growth factor (HGF) is a protective factor in myocardial injury, but its mechanisms of action have not yet been fully elucidated. Nexilin, which locates specifically to the Z-disc, is a novel Z-disc protein that enables the Z-discs to persistently withstand the extreme mechanical forces generated during muscle contraction. Therefore, we investigated the role of HGF in modulating nexilin expression in hypoxia-reoxygenation (H/R)-treated cardiomyocytes. We cultured neonatal cardiomyocytes and treated them with HGF. The mRNA and protein levels of nexilin were determined by RT-PCR and Western blotting. H/R treatment decreased nexilin mRNA expression and nexilin protein levels in cardiomyocytes. Furthermore, treatment with HGF upregulated nexilin expression and the JNK inhibitor SP600125 partly inhibited

HGF-induced nexilin upregulation. In conclusion, our results suggest that ischemia-reperfusion injury may downregulate nexilin expression in cardiomyocytes, and HGF may exert its protective role during myocardial ischemic injury through upregulation of nexilin expression in cardiomyocytes.

**Key words:** Hepatocyte growth factor; Nexilin; Cardiomyocytes; Hypoxia-reoxygenation