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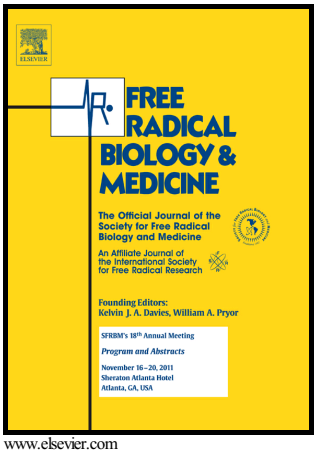

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Honokiol alleviates the degeneration of intervertebral disc via suppressing the activation of TXNIP-NLRP3 inflammasome signal pathway☆

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Abstract:

Intervertebral disc degeneration (IVDD) is a multifactorial disease and responsible for many spine related disorders, causes disability in the workforce and heavy social costs all over the world. Honokiol, a low molecular weight natural product, could penetrate into and distribute in IVDs to achieve therapeutic effect in a rat tail model. Therefore, the present study was undertaken to examine the antiinflammatory, antioxidation and chondroprotective effect of honokiol using nucleus pulposus cells and investigate its mechanisms to provide a new basis for future clinical treatment of IVDD. In the current study, we demonstrated that honokiol inhibits the H2O2-induced apoptosis (caspase-9, caspase-3, and bax), levels of oxidative stress mediators (ROS, MDA), expression of inflammatory mediators (Interleukin-6, COX-2, and iNOS), major matrix degrading proteases (MMP-3, MMP-13, ADAMTS5, and ADAMTS4) associated with nucleus pulposus degradation. Furthermore, we

☆ This work was performed in the Department of Orthopaedics, Sir Run Run Shaw Hospital, School of Medicine, Zhejiang University, Hangzhou, China; and the Key Laboratory of Biotherapy of Zhejiang Province, Hangzhou, China.

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