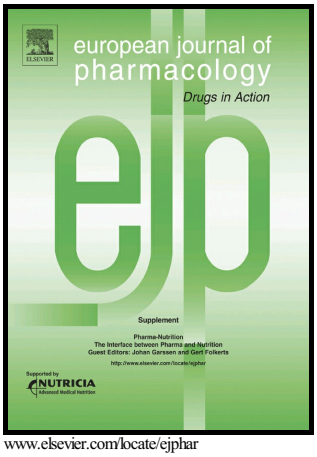

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Osthole attenuates right ventricular remodeling via decreased myocardial apoptosis and inflammation in monocrotaline-induced rats

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Abstract

Osthole (Ost) is a coumarin that exhibits wide pharmacological effects in the cardiovascular system. However, whether Ost can inhibit apoptosis and inflammation in right ventricle (RV) cardiomyocytes and prevent RV remodeling is not clear. This study was designed to investigate the effect of Ost on RV remodeling and the underlying mechanism. By applying a monocrotaline (MCT)-induced rat model, the effect of Ost on RV remodeling was investigated. Rats were given a single dose of MCT (50 mg⁄kg) subcutaneously (s.c.) to establish the RV remodeling model, followed by treatment with 10 or 20 mg⁄kg Ost via daily gavage for 28 days. The RV pressure was measured, and a histological analysis was performed. The results suggested that Ost remarkably decreased RV pressure and improved myocardial hypertrophy and mitochondrial swelling, vacuolization, and sarcoplasmic reticulum enlargement when compared with the model group. To further investigate the roles of apoptosis and inflammation in the effects of Ost on MCT-induced RV remodeling, apoptosis-related factors and inflammatory-associated factors were examined by western blot. Ost was found to inhibit myocardial apoptosis and inflammation in the