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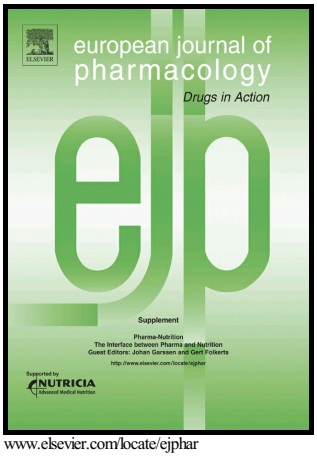

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Ginsenoside Rg1 protects rat bone marrow mesenchymal stem cells against ischemia induced apoptosis through miR-494-3p and ROCK-1

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Abstract

This study aimed to verify the cytoprotective effect of ginsenoside Rg1 in vivo, and to elucidate the mechanism of Rg1 in the ischemic microenvironment. Male rat bone marrow mesenchymal stem cells (rBMSCs) or rBMSCs treated with Rg1 were injected into ischemic region of the arterial embolism hind limb in female rats. Behavioral and histological data, obtained one-week post injection, showed that rBMSCs with Rg1 could improve the survival rate of BMSCs and enhance the therapeutic effects. rBMSCs treated with hypoxia and serum deprivation for 24 h (H/SD-rBMSCs) showed the up-regulated expression of ras homolog family member A (RhoA), Rho associated coiled-coil containing protein kinase 1 (ROCK-1), myosin light chain 2 (MLC-2), Bcl2 associated agonist of cell death (Bad) and Bcl2 associated X, apoptosis regulator (Bax); while the expression of miR-148b-3p, miR-148b-5p and miR-494-3p was down-regulated. H/SD with Rg1 treatment (H/SD+Rg1-rBMSCs) inhibited the expression of ROCK-1, MLC-2, Bad and Bax, increased the expression