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E0200  EFFECTS OF MENISCAL STEM CELLS ON MATRIX METALLOPROTEINASE SYNTHESIS OF CARDIAC FIBROBLASTS

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Objectives Mesenchymal stem cell (MSC) transplantation has been known to decrease matrix metalloproteinase (MMP) synthesis in the myocardium after myocardial infarction (MI) and to improve ventricular remodelling. However, the underlying mechanisms behind MSC have not been clearly demonstrated yet. This study investigated the effects of MSCs through paracrine actions on the MMP synthesis of cardiac fibroblasts (CFs).

Methods CFs were placed under hypoxia conditions for 24 h before co-culture with MSCs or hypoxia preconditioning MSCs (HP-MSCs) in transwell. CFs and MSCs/HP-MSCs shared the same medium, in which erythropoietin (EPO) antibody and EPO receptor (EPOR) were/were not added. Gelatin Zymography was used to detect the gelatinolytic activity of matrix metalloproteinase-2 (MMP-2) and matrix metalloproteinase-9 (MMP-9) in culture media of CFs with different conditions. Western-Blotting was used to detect the gelatinolytic activity of matrix metalloproteinase-2 (MMP-2) and matrix metalloproteinase-9 (MMP-9) in culture media of CFs with different conditions. Western-Blotting was used to detect the gelatinolytic activity of matrix metalloproteinase-2 (MMP-2) and matrix metalloproteinase-9 (MMP-9) in culture media of CFs with different conditions. Western-Blotting was used to detect the gelatinolytic activity of matrix metalloproteinase-2 (MMP-2) and matrix metalloproteinase-9 (MMP-9) in culture media of CFs with different conditions. Western-Blotting was used to detect the gelatinolytic activity of matrix metalloproteinase-2 (MMP-2) and matrix metalloproteinase-9 (MMP-9) in culture media of CFs with different conditions. Western-Blotting was used to detect the gelatinolytic activity of matrix metalloproteinase-2 (MMP-2) and matrix metalloproteinase-9 (MMP-9) in culture media of CFs with different conditions. Western-Blotting was used to detect the gelatinolytic activity of matrix metalloproteinase-2 (MMP-2) and matrix metalloproteinase-9 (MMP-9) in culture media of CFs with different conditions. Western-Blotting was used to detect the gelatinolytic activity of matrix metalloproteinase-2 (MMP-2) and matrix metalloproteinase-9 (MMP-9) in culture media of CFs with different conditions. Western-Blotting was used to detect the gelatinolytic activity of matrix metalloproteinase-2 (MMP-2) and matrix metalloproteinase-9 (MMP-9) in culture media of CFs with different conditions. Western-Blotting was used to detect the gelatinolytic activity of matrix metalloproteinase-2 (MMP-2) and matrix metalloproteinase-9 (MMP-9) in culture media of CFs with different conditions.

Conclusions MSCs may influence MMP/TIMP expression by CFs via the ERK1/2 pathway and EPO may acts as a key factor in the paracrine actions of MSCs.

E0201  HEAT SHOCK PROTEIN 90 PROTECTS RAT MENISCAL STEM CELLS AGAINST HYPOXIA AND SERUM DEPRIVATION-INDUCED APOPTOSIS VIA PI3KAKT AND ERK12 PATHWAYS

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Objective Mesenchymal stem cells (MSCs) transplantation has shown therapeutic potential to repair the ischemic and infarcted myocardium, but the effects are limited by apoptosis and loss of donor cells in host cardiac microenvironment. The aim of this study is to explore the cytoprotection of Hsp90 against hypoxia and serum deprivation induced apoptosis and the possible mechanisms.

Methods Cell viability was determined by 3-(4,5-dimethylthiazol-2-yl)-2, 5-diphenyltetrazolium bromide assay. Apoptosis was assessed by Hoechst 33258 nuclear staining and flow cytometric analysis with annexin V/PI staining. The expression of TLR4 and ErbB2 was detected by real-time PCR. The protein levels of cleaved-caspase3, bcl-2, bcl-xl, bax, total-Erk, phospho-Erk, total-Akt, phospho-Akt and hsp90 were detected by western-blot. The production of nitric oxide was measured by spectrophotometric assay.

Results Hsp90 improves MSCs viability and protects MSCs against apoptosis induced by serum deprivation and hypoxia. The