

论文

脂多糖对人类风湿性关节炎滑膜细胞基质金属蛋白酶-9表达的影响

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摘要:

目的 研究脂多糖(LPS)对人类风湿性关节炎(RA)成纤维状滑膜细胞(FLS)基质金属蛋白酶-9(MMP-9)表达的影响。方法 明胶酶谱法测定MMP-9酶活性;Western blot法测定MMP-9蛋白的表达;RT-PCR法测定MMP-9 mRNA的表达。结果 LPS处理对FLS中MMP-9表达无显著影响;LPS刺激的U937细胞培养上清液可明显增强FLS中MMP-9酶活性、蛋白分泌及mRNA表达;地塞米松可显著抑制上述变化,且其抑制作用随浓度的增加而增强。结论 LPS对FLS中MMP-9表达无直接影响,LPS刺激的U937细胞上清液使FLS中MMP-9表达增加,而地塞米松能抑制MMP-9的变化。

关键词: 成纤维状滑膜细胞 U937细胞 基质金属蛋白酶-9 脂多糖 地塞米松

Effect of lipopolysaccharide on expression of matrix metalloproteinase-9 in human synoviocyte from patients with rheumatoid arthritis

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Abstract:

Aim To study the effects of lipopolysaccharide (LPS), the supernatant of U937 cells stimulated with LPS and dexamethasone on matrix metalloproteinase-9 (MMP-9) expression in the synoviocyte from patients with rheumatoid arthritis(RA). Methods Fibroblast-like cells (FLS) from the joint tissue of patients with rheumatoid arthritis were cultured and incubated for 24 h with LPS (1 mg·L⁻¹) or the supernatant of U937 cells stimulated with LPS (1 mg·L⁻¹) for 24 h. Dexamethasone was added to the supernatant of U937 cells and FLS was incubated for 24 h. The activity of MMP-9 was analyzed by gelatin zymography. Protein expression of MMP-9 was detected by Western blot using special polyclonal antibodies. The mRNA expression of MMP-9 was detected by RT-PCR. Results The expression of MMP-9 was not markedly changed in FLS treated with LPS. The MM -9 activity, MMP-9 secretion and MMP-9 mRNA expression were significantly increased in FLS cultured with the supernatant from U937 cell treated with LPS. Dexamethasone markedly inhibited the activity, protein secretion and mRNA expression of MMP-9 in FLS cultured with the supernatant from U937 cell stimulated with LPS, and the inhibitory effects were increased as the concentration of dexamethasone increased. Conclusion LPS did not directly affect the expression of MMP-9 in FLS, but it was found to indirectly cause the increase of MMP-9 expression in FLS by stimulating U937 cell. Dexamethasone was found to inhibit this increase of MMP-9 expression.

Keywords: U937 cell lipopolysaccharide matrix metalloproteinase-9 dexamethasone fibroblast-like synoviocyte

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