

论文

白藜芦醇抑制巨噬细胞细胞外基质金属蛋白酶诱导物的表达

葛恒;张俊峰;郭炳诗;何奔;王彬尧;王长谦

1. 上海交通大学 医学院 附属仁济医院, 上海 200001; 2. 上海交通大学 医学院 附属第三人民医院, 上海 201900; 3. 上海市健康科学中心, 上海 200025

摘要:

目的探讨白藜芦醇对细胞外基质金属蛋白酶诱导物(EMMPRI N)表达的影响。方法将人类单核细胞系THP-1和MCF-7细胞共培养,测定上清液中MMP-9活性。用PMA诱导THP-1为巨噬细胞,加入白藜芦醇,观察EMMPRI N表达和MMP-9活性变化。细胞共转染实验测定白藜芦醇对PPAR γ 的激动作用。用PPAR γ 的拮抗剂GW9662预处理细胞后,测定白藜芦醇对EMMPRI N表达的影响。结果PMA诱导使单核细胞EMMPRI N表达明显增强,与EMMPRI N高表达的MCF-7细胞共培养显著增加单核细胞表达MMP-9。白藜芦醇显著抑制EMMPRI N和MMP-9生成。白藜芦醇明显激动PPAR γ ,GW9662大幅减弱白藜芦醇对EMMPRI N和MMP-9的作用。结论单核细胞向巨噬细胞分化过程中表达明显增强的EMMPRI N可能是促进MMPs表达的主要因子。白藜芦醇通过激动PPAR γ 抑制EMMPRI N的表达,可能是其抑制巨噬细胞MMPs产生的机制。

关键词: 细胞外基质金属蛋白酶诱导物 过氧化物酶体增殖剂激活受体 γ 基质金属蛋白酶 白藜芦醇 单核/巨噬细胞

Resveratrol inhibits expression of EMMPRI N from macrophages

GE Heng; ZHANG Jun-feng; GUO Bing-shi; HE Ben; WANG Bin-yao; WANG Chang-qian

Abstract:

AimTo investigate the effect of resveratrol on EMMPRI N expression of macrophages. MethodsHuman monocytic cell line THP-1 cells were co-cultured with EMMPRI N-highly-expressed MCF-7 cells; MMP-9 production was assayed by zymography. THP-1 cells were induced by PMA, expression of EMMPRI N was assayed by Western blotting. Cells were treated with resveratrol or PPAR γ agonist — pioglitazone during differentiation, EMMPRI N expression and MMP-9 activity were assayed. U937 cells were co-transfected with PPAR γ expression and luciferase-coding reporter vector, then cultured with pioglitazone or resveratrol, the activating capability of resveratrol on PPAR γ was evaluated by measuring the luciferase activity. THP-1 cells were pretreated with PPAR γ antagonist — GW9662 before pioglitazone or resveratrol treatment, then assayed for EMMPRI N expression and MMP-9 production. ResultsEMMPRI N expression was greatly increased during the differentiation from monocytes to macrophages; co-culturing with MCF-7 cells significantly increased MMP-9 production by monocytes. Both resveratrol and pioglitazone markedly inhibited EMMPRI N expression during monocytes differentiation. Resveratrol significantly activated PPAR γ and GW9662 greatly decreased the effect of resveratrol on EMMPRI N and MMP-9. ConclusionEMMPRI N expression is greatly up-regulated from monocytes to macrophages, which may play a role in inducing MMPs production by monocytes/macrophages. Resveratrol can significantly inhibit EMMPRI N expression via activating PPAR γ , which may be the underlying mechanism of its inhibitory effect on MMPs production by monocytes/macrophages.

Keywords: PPAR γ MMPs resveratrol monocytes/macrophages EMMPRI N

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通讯作者: 王长谦

作者简介:

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