中国病理生理杂志 2009 24 (6): 1142-1146 ISSN: 1000-4718 CN: 44-1187/R

论著

槲皮素对LPS诱导的体外培养肝细胞损伤的影响及机制

矫强[1],郭竹英△,徐芒华,王世婷,高丰厚

上海交通大学医学院附属第三人民医院实验中心，上海 201900

收稿日期 2008-6-10 修回日期 2008-11-17 网络版发布日期 2009-8-16 接受日期 2008-11-17

摘要 目的： 通过体外观察槲皮素对脂多糖（LPS）所致肝细胞损伤和肿瘤坏死因子（TNF-α）表达的影响，探讨槲皮素的作用及其机制。方法：胶原酶灌流分离培养大鼠肝细胞，40 mg/L LPS诱导损伤，同时用0.5-10 μmol/L浓度槲皮素进行干预，作用24 h后，四甲基偶氮唑盐比色法（MTT）、PI-AnnexinV染色检测肝细胞的增殖凋亡比例、测定上清液乳酸脱氢酶含量，ELISA、RT－PCR方法检测TNF-α表达。结果：40 mg/L LPS作用于原代培养大鼠肝细胞24 h后，与对照组相比，细胞生长抑制率达27%，细胞总凋亡率30.2%，培养上清液LDH含量增加20倍，TNF-α mRNA和蛋白表达明显增加（P<0.05）。给予0.5-10 μmol/L槲皮素后，各项指标有明显下降，且呈量效关系。结论：0.5-10 μmol/L槲皮素拮抗LPS所致的肝细胞损伤，其保护作用的机制可能与抑制TNF-α的表达有关。

关键词 槲皮素 肝细胞 脂多糖类； 肿瘤坏死因子

分类号 R363.2

Effects of ouercetin on lipopolysaccharide induced hepatocyte injury in vitro

JIAO Qiang,GUO Zhu-ying,XU Mang-hua,WANG Shi-ting,GAO Feng-hou

Experimental Center, No.3 People s Hospital Affiliated to Shanghai Jiaotong University School of Medicine, Shanghai 201900, China. E-mail: zyguoo@126.com

Abstract

<FONT face=Verdana>AIM: To study the effects of quercetin on lipopolysaccharide (LPS) induced hepatocyte injury and the expression of TNF-α in vitro. METHODS: Hepatocytes were isolated from male Sprague-Dawley rats by collagenase perfusion. LPS at concentration of 40 mg/L was used to induce injury to the cultured cells, and 0.5-10 μmol/L quercetin was added at the same time. After 24 h of incubation, the cell apoptosis rates were detected by MTT and PI-AnnexinV. LDH and TNF-α were measured by kits. RESULTS: 40 mg/L LPS caused a 27% growth inhibition. The apoptosis rate was 30.2%. LDH leakage was 20 folds higher than normal. TNF-α expression significantly increased. Treated with quercetin at doses of 0.5-10 μmol/L, the apoptosis rate, LDH leakage and TNF-α expression in hepatocytes were attenuated in a dose dependent manner. CONCLUSION: 0.5-10 μmol/L of quercetin protects hepatocytes from injury induced by LPS, which is associated with suppression of the inflammatory cytokine TNF-α.</FONT>

Key words Quercetin Hepatocytes Lipopolysaccharides Tumor necrosis factor

DOI: 1000-4718

通讯作者 郭竹英 zyguoo@126.com