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论著

核因子-κB活化参与Ox-LDL诱导人肾小球系膜细胞表达单核细胞趋化蛋白-1(英文)

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摘要 目的：研究核因子-κB(NF-κB)在氧化低密度脂蛋白(Ox-LDL)诱导的体外培养的人肾小球系膜细胞表达单核/巨噬细胞趋化蛋白-1(MCP-1)中的作用。方法： 采用凝胶迁移率变动分析检测NF-κB的DNA结合活性变化，以免疫组化观测细胞内REL P65的核转位，用细胞ELISA法检测细胞内MCP-1及IκBα蛋白含量变化。结果： 不同浓度(10、25、50、100 mg/L)Ox-LDL刺激肾小球系膜细胞均可引起细胞NF-κB的DNA结合活性增强，50 mg/L Ox-LDL活化MCs效果最明显(8.50±1.14，P＜0.01 vs control； P＜0.05 vs 10, 25和100 mg/L Ox-LDL)。Ox-LDL刺激MCs 30-240 min均可以活化NF-κB，60 min时相点活性最强(11.0±2.11，P＜0.01 vs control； P＜0.05 vs 30 min or 240 min)。以50 mg/L Ox-LDL刺激MCs 1 h后，细胞内IκBα蛋白水平最低(0.050±0.006，n=5,P＜0.01 vs control)，作用24 h MCP-1表达水平最高(0.331±0.016， n=5,P＜0.01 vs control)。NF-κB活化的同时伴有REL P65核转位。上述效应可被NF-κB特异性抑制剂吡咯二硫氨基甲酸酯(PDTC)所抑制。结论： Ox-LDL刺激人肾小球系膜细胞产生MCP-1是由NF-κB调控，NF-κB参与了脂质肾损害的发病过程。

关键词 脂蛋白类,LDL； 系膜细胞； 单核细胞化学吸引蛋白质1； NF-κB

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Nuclear factor-κB activation is involved in MCP-1 expression in human mesangial cells induced by Ox-LDL

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Abstract

<FONT face=Verdana>AIM: To investigate the role of nuclear factor-κB (NF-κB) in the expression of monocyte chemoatractant protein-1 (MCP-1) in human mesangial cells (HMCs) induced by oxidized low-density lipoprotein (Ox-LDL). METHODS: HMCs were used as target cells. Inhibitory κBα (IκBα) and MCP-1 protein level was measured by cell ELISA. Activities of transcriptional factors NF-κB were determined by electrophoresis mobility shift assay (EMSA). Immunohistochemistry was used to detect the translocation of Rel p65. RESULTS: NF-κB DNA-binding activation in MCs was observed when 10-100 mg/L Ox-LDL was added to the medium, and 50 mg/L Ox-LDL caused the strongest effect (8.50±1.14, P<0.01 vs control; P<0.05 vs 10, 25 and 100 mg/L Ox-LDL). The most optimal stimulation time was 60 min (11.0±2.11, P<0.01 vs control; P<0.05 vs 30 min or 240 min). IκBα protein level in MC dropped down most obviously after 60 min incubation with 50 mg/L Ox-LDL (0.050±0.006, n=5, P<0.01 vs control), while MCP-1 expression level was the highest (0.331±0.016, n=5, P<0.01 vs control). The translocation of Rel p65 from cytoplasm to nucleus was detected too. NF-κB inhibitor pyrroledithiocarbomate (PDTC) could inhibit these effects induced by Ox-LDL. CONCLUSION: Activation of NF-κB regulate the expression of MCP-1 in HMCs induced by Ox-LDL.</FONT>

Key words Lipoproteins LDL Mesangial cells Monocyte chemoattractant protein-1 NF-kappa B

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