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论文

黄芪多糖对高血压病患者血清致伤血管内皮细胞 TLR4、NF-κB表达的影响

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摘要：

目的 观察黄芪多糖(APS)对TLR-NF-κB信号转导通路的影响，探讨其对高血压病患者血清损伤的血管内皮细胞的保护机制。方法 用10%的高血压病患者及健康人血清干预人脐静脉内皮细胞(HUVEC-C)24h，实时荧光定量(PCR)法检测TLR4 mRNA表达。不同浓度的APS干预脂多糖(LPS)诱导的HUVEC-C TLR4表达（24h）及核转录因子（NF-κB）活化（2h），PCR法检测TLR4 mRNA及NF-κB mRNA的表达，免疫印迹（Western-blot）技术检测TLR4蛋白及NF-κB蛋白的表达。结果 血清作用24h后，高血压病组TLR4 mRNA的表达较健康组增高(P<0.01)。APS可呈剂量依赖性减少LPS诱导的TLR4 mRNA高表达，抑制LPS诱导的TLR4蛋白高表达和ⅠκBα蛋白的降解(P<0.05, P<0.01, P<0.001)。结论 TLR-NF-κB信号途径介导的炎症反应和免疫紊乱是高血压病血管内皮损伤的机制之一，APS可通过抑制其表达保护血管内皮细胞损伤。

关键词： 高血压病；血管内皮细胞；Toll样受体4；抑制性κBα；黄芪多糖

Effect of APS on TLR4、NF-κB expression in HUVEC-C injured by patients blood with hypertension disease

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Abstract:

Objective To investigate the effects of APS on TLR4、 NF-κB expression and signal pathway in vascular endothelial cells injured by hypertension patients′ blood. Methods The human umbilical vein endothelial cells (HUVEC-Cs) were intervened by 10% serum of hypertension patient or healthy human for 24h. TLR4mRNA expression in HUVEC-Cs was detected by real time PCR. After the lipopolysaccharide(LPS) activated HUVEC-Cs were effected by different dosage APS, TLR4 and NF-κB mRNA were detected by real time PCR, TLR4 and NF-κB protein were detected by western blot. Results After the serum acted the HUVEC-Cs for 24h, TLR4mRNA expression was increased in hypertension disease group than the healthy group(P<0.01). APS showed the ability of reducing TLR4mRNA expression, inhibiting TLR4 protein expression and suppressing $I_{\kappa}B$ protein degeneration in LPS activated HUVEC-Cs in a dose-dependent manner(P<0.05, P<0.01, P<0.001). Conclusion Inflammatory reaction and immunity disorder initiated by TLR-NF-κB signal pathway is one of the influencing mechanisms in the damage of vascular endothelial cells of hypertension disease. APS can reduce the damage.

Keywords: Essential hypertension; Vascular endothelial cells; Toll-like receptor 4; Nuclear factorκB; Astragaluspolysaccharide

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