

实验研究报道

TLR4mAb对急性期溃疡性结肠炎小鼠结肠黏膜中细胞因子IL-17、IL-10及TGF-β的影响

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摘要

目的 探讨TLR4单克隆抗体(toll like receptor 4 monoclonal antibodies, TLR4mAb) 对葡聚糖硫酸钠(dextran sulfate sodium, DSS) 诱导的急性期溃疡性结肠炎(ulcerative colitis, UC) 小鼠结肠黏膜的细胞因子IL-17、IL-10及TGF-β的影响情况。方法 30只BALB/c小鼠分为A--E组: 对照组、模型组以及低、中、高剂量干预组。A组小鼠饮用蒸馏水7d; B-E组小鼠仅饮用5%DSS水溶液共7d以产生急性期溃疡性结肠炎模型。造模开始的同时, 分别给3组干预组小鼠以低、中、高剂量TLR4mAb腹腔内注射以观察其干预作用。观察指标包括疾病活动指数(disease activity index, DAI)、结肠组织病理学评分(histopathological score, HPS)。造模及干预7d后处死小鼠, Realtime-PCR法检测各组肠黏膜IL-17、IL-10及TGF-β的mRNA表达。结果(1) 与对照组相比, 模型组小鼠结肠黏膜DAI及HPS明显增高(P<0.01)。与模型组相比, 在使用TLR4mAb干预后低、中、高剂量组DAI和HPS均有不同程度的缓解。(2) 与模型组相比, 在使用TLR4mAb后低、中、高剂量组细胞因子IL-17、IL-10及TGF-β在小鼠结肠黏膜中的表达均有不同程度的降低。结论TLR4mAb可以抑制肠道免疫的过度激活, 减少炎症因子的过度表达, 从而反馈性下调抑炎细胞因子的表达, 打破促炎/抑炎因子的失衡状态, 减轻急性期溃疡性结肠炎的炎症表现。

关键词 [溃疡性结肠炎; TLR4单克隆抗体; IL-17; IL-10; TGF-β; 小鼠](#)

分类号

Preventive effects of TLR4 monoclonal antibodies on the gut mucosal cytokines (IL-17, IL-10 and TGF-β) expression in mice with DSS-induced acute Ulcerative Colitis

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Abstract

Objective To evaluate the preventive effects of toll like receptor 4 monoclonal antibodies (TLR4mAb) on inflammation, the gut mucosal cytokines (IL-17, IL-10 and TGF-β) expression in dextran sulfate sodium (DSS)-induced acute ulcerative colitis (UC) in mice. Methods Thirty male BALB/c mice were randomly assigned into five groups from group A to group E: normal control group (A), UC model group (B), low dose, moderate dose and large dose intervention group (C, D, E). Group B to group E were only given 5.0% (wt/wt) DSS solution as drinking water during 7 days' observation as to induce acute intestinal inflammation while the normal control was drinking distilled water freely. Group C, D, E received TLR4mAb injection every 48h intraperitoneally at the same time after the start of the DSS exposure. Daily disease activity index (DAI) and histopathological score (HPS) were evaluated. The mRNA expression of IL-17, IL-10 and TGF-β were measured by Realtime-PCR. Results (1) Compared with the control group, the DAI and HPS in the UC group were markedly higher (P<0.01). Compared with the UC group, the DAI and HPS in group C to E all decreased. (2) Compared with the UC group, the expression of three cytokine factors, such as IL-17, IL-10 and TGF-β in group C to E all decreased. Conclusion TLR4mAb can inhibit the excessive immune activity of the intestinal tract by downregulating the expression of cytokines.

Key words [ulcerative colitis](#), [toll like receptor 4 monoclonal antibodies \(TLR4mAb\)](#); [IL-17](#); [IL-10](#); [TGF-β](#) [mice](#)

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