

论著

CCK-8上调LPS诱导的大鼠肺组织HO-1表达的信号转导机制

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摘要 目的: 旨在研究八肽胆囊收缩素(CCK-8)上调脂多糖(LPS)诱导的大鼠肺组织中血红素氧合酶(HO)-1表达的信号转导机制。方法: 将42只雄性SD大鼠随机分为7组(每组6只), 即对照组、LPS组、LPS+SP600125(JNK特异性抑制剂)组、CCK-8+LPS组、CCK-8+LPS+SP600125组、CCK-8组、CCK-8+SP600125组。注药后6 h放血处死动物留取肺组织, 应用RT-PCR、Western blotting和免疫荧光流式细胞术(FCM)等技术分别检测各组肺组织HO-1 mRNA和蛋白表达。结果: 与正常对照组相比, LPS组可见肺组织中出现明显的HO-1 mRNA表达的阳性信号, CCK-8可使LPS诱导的阳性表达信号进一步增强, CCK-8单独作用也可上调HO-1表达。信号密度扫描结果显示, LPS组、CCK-8+LPS组和CCK-8组HO-1 mRNA表达强度分别是正常对照组3.01(P<0.01)、5.88(P<0.01)和3.45倍(P<0.01); JNK特异性抑制剂SP600125抑制了CCK-8和(或)LPS诱导的HO-1 mRNA表达; Western blotting、免疫荧光FCM检测结果显示, 肺组织HO-1蛋白表达变化与其mRNA表达一致。结论: JNK/c-Jun通路在CCK-8上调LPS诱导肺组织HO-1表达过程中发挥重要作用。

关键词 [脂多糖类](#); [胆囊收缩素](#); [血红素氧合酶-1](#); [信号转导](#)

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CCK-8 up-regulates signal pathway of LPS-induced HO-1 expression in rat lungs

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Abstract

AIM: To study the signal pathway involved in up-regulation of LPS-induced HO-1 expression by CCK-8. METHODS: Forty-two SD rats were divided into 7 groups (six rats each) randomly as follows: control group, LPS group, LPS+SP600125 (JNK-specific inhibitor) group, CCK-8+LPS group, CCK-8+LPS+SP600125 group, CCK-8 group and CCK-8 +SP600125 group. Lungs from the rats in these 7 groups were excised 6 h after the agents were administered. HO-1 mRNA expression was examined by RT-PCR. The protein expression of HO-1 was detected by Western blotting and immunofluorescence flow cytometry (FCM). RESULTS: There were significant positive expression of HO-1 mRNA in LPS group compared to control group. CCK-8 enhanced LPS-induced HO-1 mRNA expression and CCK-8 alone induced HO-1 mRNA expression as well. The mRNA expressions of HO-1 in LPS group, CCK-8+LPS group and CCK-8 group were 3.01 (P<0.01), 5.88 (P<0.01) and 3.45 (P<0.01) times as many as that in control group, respectively. SP600125 inhibited the mRNA expression of HO-1 induced by CCK-8 and (or) LPS. The change of HO-1 protein expression was in accordance with that of HO-1 mRNA expression by Western blotting and immunofluorescence FCM. CONCLUSION: These results suggest that JNK/c-Jun signal pathway plays an important role in the up-regulation of LPS-induced HO-1 expression by CCK-8.

Key words [Lipopolysaccharides](#) [Cholecystokinin](#) [Heme oxygenase-1](#) [Signal transduction](#)

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