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论著

CCK-8对内毒素血症小鼠腹腔巨噬细胞B7.1和B7.2表达及协同刺激功能的影响

张风华[1],李淑瑾[1],丛斌[1△],张正茂[2],朱桂军[2],丛军[3],马春玲[1],倪志宇[1],付丽红[1]

1河北医科大学基础医学院法医学系,河北省法医学实验室,河北 石家庄 050017;2河北医科大学第四医院,河北 石家庄 050011;3河北省赵县人民医院,河北 赵县 051530

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摘要 目的: 探讨八肽胆囊收缩素（CCK-8）对内毒素血症小鼠腹腔巨噬细胞B7.1和B7.2表达及其协同刺激活性的影响。

方法: 将BALB/c小鼠随机分组（*n*=4）,分别腹腔注射生理盐水（0.2-0.3 mL/mouse），LPS（100 μg/mouse）和/或CCK-8 (5 nmol/mouse)及CR1409（100 μg/mouse）、CR2945（100 μg/mouse）。12 h后收集并纯化腹腔巨噬细胞。采用流式细胞术分析细胞表面B7.1和B7.2含量的变化。用免疫磁珠从小鼠脾细胞分离CD4+T细胞，按4∶1数量比与上述处理的腹腔巨噬细胞共同体外培养，同时加入ConA 5 mg/L，采用［^{3}H］掺入法测定CD4+T细胞增殖，反映巨噬细胞的协同刺激活性。

结果: 整体应用CCK-8作用小鼠腹腔巨噬细胞，与对照组相比，CCK-8可上调静息小鼠腹腔巨噬细胞B7.2的表达，而对B7.1的表达则无影响；并且CCK-8使CD4+T细胞［^{3}H］-TdR的掺入率升高，即促进其增殖，增强巨噬细胞的协同刺激活性。CCK-8降低LPS活化的内毒素血症小鼠腹腔巨噬细胞B7.1和B7.2的表达并且降低CD4+T细胞的［^{3}H］-TdR掺入率，即抑制其增殖，抑制其协同刺激活性。CR1409及CR2945均能逆转CCK-8的上述作用，且CR1409的作用较CR2945更明显。

结论: CCK-8通过上调巨噬细胞B7.2表达而增强其协同刺激活性；并且降低LPS活化的内毒素血症小鼠腹腔巨噬细胞B7.1和B7.2的表达，抑制其协同刺激活性。该作用由CCK1R及CCK2R共同介导，其中CCK1R起主要介导作用。

关键词 胆囊收缩素 巨噬细胞B7.1 巨噬细胞B7.2 内毒素血症

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Effect of CCK-8 on the B7.1 and B7.2 expressions and costimulation of endotoxemia murine perineral macrophages

ZHANG Feng-hua[1],LI Shu-jin[1],CONG Bin[1],ZHANG Zheng-mao[2],ZHU Gui-jun[2],CONG Jun[3],MA Chun-ling[1],NI Zhi-yu[1],FU Li-hong[1]

1Department of Forensic Medicine,Hebei Medical University,Forensic Laboratory of Hebei Province,Shijiazhuang,050017,China;2The Fourth Hospital of Hebei Medical University,Shijiazhuang 050011,China;3The People’s Hospital of Zhao County,Zhaoxian 051530,China.E-mail: bincong@263.net

Abstract

<FONT face=Verdana>AIM: To investigate in vivo effects of CCK-8 on the expressions of B7.1 and B7.2 and the costimulatory activity for T lymphocytes in endotoxemia murine perineral macrophages.
METHODS: BALB/c mice were randomly assigned to 8 groups (n=4) injected ip.with NS alone (0.2-0.3 mL/mouse),or with LPS (100 μg/mouse),in the presence or absence of CCK-8 (5 nmol/mouse) and CR1409 (100 μg/mouse),CR2945 (100 μg/mouse).After 12 h,macrophages were purified from the peritoneal exudate.The B7.1/B7.2 expression on purified macrophages was analyzed by flow cytometry and,alternatively,purified macrophages were assayed for macrophage costimulatory activity.ConA was added into the culture medium to stimulate CD4+T cell proliferation.The proliferation was determined by measuring ［³H］-TdR incorporation in a β-scintillation counter.
RESULTS: The in vivo administration of CCK-8 resulted in increase of B7.2 expression,but without any influence on B7.1 expression in peritoneal macrophages.CCK-8 also exhibited increased the ［³H］-TdR incorporation in CD4+T

cells.However,the in vivo CCK-8 administration reduced both B7.1 and B7.2 expression in LPS-induced endotoxemia murine peritoneal macrophages and the ［³H］-TdR incorporation in CD4+T cells.These effects were consistent with the in vitro effects of CCK-8 on LPS-stimulated peripheral macrophages.CR1409 and CR2945 abolished the above effects of CCK-8.CR1409 was more effective than CR2945.
CONCLUSION: CCK-8 enhances macrophage costimulatory activity by upregulating B7.2 expression,and at the same time,reduces LPS-induced costimulatory activity of endotoxemia murine perineral macrophages by downregulating B7.1 and B7.2 expression,which is mediated by CCK1R and CCK2R.CCK1R might be the major receptor responsible for the modulation of CCK-8 on costimulation.</FONT>

Key words Cholecystokinin Macrophage B7.1 Macrophage B7.2 Endotoxemia

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通讯作者 丛斌 bincong@263.net