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论著

黄芩含药血清对脂多糖刺激大鼠原代小胶质细胞的保护作用

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摘要 目的 探讨黄芩提取物(SBE)含药血清对细菌脂多糖(LPS)引起的大鼠原代小胶质细胞活化的抑制作用。方法 大鼠ig给予SBE 25 g·kg^{-1}，给药后0.5~6 h眼底静脉丛取血，制备SBE含药血清。将SBE含药血清(终浓度10%)和LPS(终浓度1 mg·L^{-1})与大鼠原代小胶质细胞共培养24 h。采用MTT法测定细胞存活率；Griess还原法测定细胞培养液中一氧化氮(NO)含量；用超氧化物歧化酶(SOD)活性测定试剂盒测定SOD活性；分别用微量丙二醛(MDA)和谷胱甘肽(GSH)含量测定试剂盒测定MDA和GSH含量。结果 在不影响细胞存活率的情况下，不同时间点的SEB含药血清可以显著降低LPS刺激的大鼠原代小胶质细胞培养液中NO和MDA的含量，SEB 0.5，1和2 h的含药血清使NO由LPS对照组的(14.2±0.8)μmol·L^{-1}分别降低至12.9±0.6，9.2±0.6和(9.9±0.4)μmol·L^{-1}(P<0.05)；SEB 1，2和3 h的含药血清使MDA由LPS对照组的(13.4±0.7)μmol·L^{-1}分别降低至9.42±0.64，9.13±0.57和(11.78±0.71)μmol·L^{-1}(P<0.05)；SBE 1和2 h含药血清可以显著增强培养液中SOD活性，分别由LPS对照组的(2.53±0.13)kU·L^{-1}升高至3.52±0.18和(3.74±0.19)kU·L^{-1}(P<0.05)；SBE 1和2 h含药血清可以显著升高培养液中GSH含量，分别由LPS对照组的(7.1±1.1)mg·L^{-1}升高至8.6±1.6和(9.2±1.7)mg·L^{-1}(P<0.05)。结论SBE含药血清对LPS刺激的大鼠原代小胶质细胞活化具有一定的抑制作用。

关键词 黄芩提取物 细菌脂多糖 一氧化氮 丙二醛 超氧化物歧化酶 谷胱甘肽

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Inhibitory effect of serum containing *Scutellaria baicalensis* Georgi on activity of rat primary microglia cells stimulated by lipopolysaccharide

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Abstract

OBJECTIVE To investigate the protective effect of serum containing extract of *Scutellaria baicalensis* Georgi (SBE) on the lipopolysaccharide-stimulated activity of primary microglia cells of rats. METHODS The rats were ig given SBE 25 g·kg^{-1} and blood was taken from retinal venous plexuses within 0.5-6 h and the serum containing SBE was prepared. Then the primary microglia cells from normal rats were incubated with serum containing SBE (10%) and LPS (final concentration 1 mg·L^{-1}) for 24 h. The content of nitric oxide(NO), malondialdehyde(MDA), superoxide dismutase(SOD) and glutathione(GSH) in the supernatant was examined with corresponding kits. RESULTS Serum containing SBE markedly decreased the content of NO and MDA in the LPS-stimulated primary rat microglia cells without affecting cell survival. NO content of the LPS model group was (14.2±0.8)μmol·L^{-1}; serum containing SBE within 0.5, 1 and 2 h reduced NO content to 12.9±0.6,9.2±0.6 and (9.9±0.4)μmol·L^{-1}(P<0.05). MDA content of the LPS model group was (13.4±0.7) μmol·L^{-1}; serum containing SBE within 1, 2 and 3 h decreased MDA content to 9.4±0.6,9.1±0.6 and (11.8±0.7) μmol·L^{-1}(P<0.05). Also, serum containing SBE remarkably increased the content of SOD and GSH in the LPS-stimulated primary rat microglia cells without affecting cell survival. SOD activity of the LPS model group was (2.53±0.13)kU·L^{-1}; serum containing SBE within 1 and 2 h increased SOD activity to 3.52±0.18 and (3.74±0.19)kU·L^{-1}(P<0.05). GSH content of the LPS model group was (7.1±1.1)mg·L^{-1}; serum containing SBE within 1 and 2 h increased GSH content to 8.6±1.6 and (9.2±1.7)g·L^{-1}. CONCLUSION Serum containing SBE can inhibit the activity of rat primary microglia cells stimulated by lipopolysaccharide.

Key words *Scutellaria baicalensis* Georgi lipopolysaccharides nitric oxide malondialdehyde superoxide dismutase glutathione

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