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EFFECT OF CAPSAICIN ON LPS-INDUCED PROSTAGLANDIN E₂ PRODUCTION BY MURINE PERITONEAL MACROPHAGES

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Proinflammatory mediators such as prostaglandins (PGs), cyclooxygenase-2 (COX-2), and inducible nitric oxide synthase (iNOS) are known to be key mediators in pathogenesis of inflammatory diseases. Capsaicin, the major ingredient of hot pepper, is considered to elicit anti-inflammatory property. In this study, the effect of capsaicin on the prostaglandin E₂ (PGE₂) production was investigated in murine peritoneal macrophages. Peritoneal macrophages were stimulated with lipopolysaccharide (LPS). The production level of PGE₂ by macrophages was measured by EIA. The levels of COX-2 and iNOS expression in protein or/and mRNA were also determined by Western blot analysis and RT-PCR. Capsaicin significantly inhibited the production of LPS-induced PGE₂ by peritoneal macrophages in a dose-dependent manner. Capsaicin did not affect the level of COX-2 expression in protein/mRNA and activity in the cells, however capsaicin decreased the levels of NO release and iNOS protein expression. Capsaicin may be useful for ameliorating inflammatory diseases related to PGE₂ overproduction and for developing chemopreventive agent.