

mastocytoma P815 cells

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The inhibitory effects of tetrahydropapaverine on serotonin biosynthesis in serotonin-producing murine mastocytoma P815 cells were investigated. Tetrahydropapaverine at concentration ranges of 5-20 μ M decreased serotonin content in a concentration-dependent manner in P815 cells and showed 42.1 % inhibition of serotonin content at 5.0 μ M for 24 hr. The value of 50 % inhibitory concentration, IC_{50} , of tetrahydropapaverine was 6.2 μ M. Under these conditions, tryptophan hydroxylase (EC 1.14.16.4, TPH) was inhibited for 24-36 hr after treatment with tetrahydropapaverine in P815 cells (49.1 % inhibition at 7.5 μ M). In addition, tetrahydropapaverine inhibited the activity of TPH, prepared from the P815 cells (P815-TPH), with the IC_{50} value of 5.7 μ M. Tetrahydropapaverine inhibited un-competitively P815-TPH with the substrate L-tryptophan, and inhibited non-competitively with the cofactor DL-6-methyl-5,6,7,8-tetrahydropteridin. The K_i value of tetrahydropapaverine with L-tryptophan was 10.1 μ M. These data indicate that tetrahydropapaverine leads to a decrease in serotonin content by the inhibition of TPH activity in P815 cells.

[PA1-59] [2003-10-10 14:00 - 17:30 / Grand Ballroom Pre-function]

Anti-inflammatory mechanism of bee venom in Raw 264.7 cells and Synoviocyte

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Bee venom (BV) has been utilized to relieve pain and to treat inflammatory diseases such as rheumatoid arthritis (RA). However, the molecular mechanism by which BV-induced anti-arthritis effect has been not reported yet. Therefore, in the present study we investigated anti-inflammatory effect of BV in a murine macrophage cell line Raw 264.7 cell and synoviocyte obtained from RA patients. The present data showed that BV has a preventive effect on lipopolysaccharide (LPS) and sodium nitroprusside (SNP) induced induction of COX-2, cPLA2 and iNOS. BV also reduced the production of NO and PGE₂ dose dependently (0.5-5 μ g/ml). BV also inactivated LPS and SNP-induced NF- κ B, an important transcription factor regulating expression of COX-2, cPLA2 and iNOS. In addition, BV blocked NF- κ B-dependent luciferase activity in Raw264.7 cells and THP-1 cells. Moreover, BV inhibited nuclear translocation of p50 subunit of NF- κ B. These results showing that BV induced target disruption of p50 subunit in the activation of NF- κ B, thereby inhibition of expression of genes involving in the inflammatory response may be critical in the anti-inflammatory effect of BV.

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A long duration of anticoagulant activity of acharan sulfate in vivo

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Introduction: We previously reported that a new glycosaminoglycan, acharan sulfate (AS) from the African giant snail *Achatina fulica* showed anticoagulation activity in vitro, but it was much less than that of heparin. In the present study, the anticoagulant activity of AS was investigated in vivo. Methods: AS and heparin were administered to rats in various concentrations and anticoagulant activities were measured. Both were also compared in a thrombin-induced Results: Intravenous administration of acharan sulfate prolonged the clotting time (APTT) in mice and rats in a dose-dependent manner. Although the activity was low in rats, it could be maintained over 5h after administration of AS (30 mg/kg). In contrast, the activity of heparin (5 mg/kg) was restored to the normal level after 3 h. In a thrombin-induced lethality model in mice AS (20 mg/kg) protected the lethality by 80 percent, while heparin (20 mg/kg) did not show any protective activity after 3.5 h administration of