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 µM decreased serotonin content in a concentration-dependent manner in P815 cells and showed 42.1% inhibition of serotonin content at 5.0 µM for 24 hr. The value of 50% inhibitory concentration, IC50, of tetrahydropapaverine was 6.2 µM. 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 µM). In addition, tetrahydropapaverine inhibited the activity of TPH, prepared from the P815 cells (P815-TPH), with the IC50 value of 5.7 µM. 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 Ki value of tetrahydropapaverine with L-tryptophan was 10.1 µM. 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 ug/ml). BV also inactivated LPS and SNP-induced NF-κB, an important transcription factor regulating expression of COX-2, cPLA2 and iNOS. In addition, BV blocked NF-κB-dependent luciferase activity in Raw264.7 cells and THP-1 cells. Moreover, BV inhibited nuclear translocation of p50 subunit of NF-κB. These results showing that BV induced target disruption of p50 subunit in the activation of NF-κB, 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