

on secretion of catecholamines (CA) evoked by ACh, high K⁺, DMPP and McN-A-343 from the isolated perfused rat adrenal gland and to establish the mechanism of its action. Arecoline (0.1 ~ 1.0 mM) perfused into an adrenal vein for 60 min produced dose- and time-dependent inhibition in CA secretory responses evoked by ACh (5.32 x 10⁻³ M), DMPP (10⁻⁴ M for 2 min) and McN-A-343 (10⁻⁴ M for 2 min). However, lower dose of arecoline did not affect CA secretion by high K⁺ (5.6 x 10⁻² M), higher dose of it reduced greatly CA secretion of high K⁺. Arecoline itself did also fail to affect basal catecholamine output. Furthermore, in adrenal glands loaded with arecoline (300 μM), CA secretory response evoked by Bay-K-8644, an activator of L-type Ca²⁺ channels was markedly inhibited while CA secretion by cyclopiazonic acid, an inhibitor of cytoplasmic Ca²⁺-ATPase was not affected. However, nicotine (30 μM), given into the adrenal gland for 60 min, initially rather enhanced CA secretory responses evoked by ACh (5.32 x 10⁻³ M), high K⁺ (5.6 x 10⁻² M) and McN-A-343 (10⁻⁴ M for 2 min), not that by DMPP (10⁻⁴ M for 2 min) followed by great inhibition later. Taken together, these results suggest that arecoline inhibits greatly CA secretion evoked by stimulation of cholinergic (both nicotinic and muscarinic) receptors, but at lower dose does not affect that by membrane depolarization and at larger dose inhibits that. It is thought that this inhibitory effect of arecoline may be mediated by blocking the calcium influx into the rat adrenal medullary chromaffin cells without the inhibition of Ca²⁺ release from the cytoplasmic calcium store. It also seems that there is difference in the mode of action between nicotine and arecoline in rat adrenomedullary CA secretion.

[PA1-40] [10/18/2001 (Thr) 14:00 - 17:00 / Hall D]

Inhibitory effect of Poncirus Fructus on stem cell factor induced mast cell migration

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SCF can be considered a cardinal cytokine in mast cell biology as it affects mast cell differentiation, survival and migration. During inflammation, an increase in the number of mast cells can be seen. Such accumulation probably requires directed migration of mature mast cells or pre-cursors. We investigated whether Poncirus Fructus was able to inhibit directional migration of rat peritoneal mast cells (RPMCs) stimulated by SCF. In this study we report that Poncirus Fructus (1mg/ml) inhibits mast cell migration and F-actin distribution of rat peritoneal mast cell (RPMC) in SCF-induced mast cell migration. We also found that morphological alteration increased by SCF was completely abolished by pretreatment with Poncirus Fructus (1mg/ml). And Poncirus Fructus inhibited IL-6 and TNF-α secretion induced by SCF. Our findings provide evidence that the chemotactic response and inflammatory cytokines secretion to SCF was blocked by Poncirus Fructus.

[PA1-41] [10/18/2001 (Thr) 14:00 - 17:00 / Hall D]

Effect of Piperine, a Primary Component of Black pepper (*Piper nigrum*), on the Arachidonic acid Metabolism in Platelet Aggregation induced by Collagen

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An effect of piperine, a piperidine alkaloid of black pepper (*Piper nigrum*), on platelet aggregation and arachidonic acid metabolism has been investigated using rabbit washed platelets. Measurements of arachidonic acid liberation and generation of thromboxane B₂ (TxB₂) and prostaglandin D₂ (PGD₂), through cyclooxygenase pathway, or 12-hydroxyeicosatetraenoic acid (12-HETE), through lipoxygenase