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 no 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 by rabbit washed platelets. Measurements of arachidonic acid liberation and generation of thromboxane B_2(TxB_2) and prostaglandin D_2(PGD_2), through cyclooxygenase pathway, or 12-hydroxyeicosatetraenoic acid(12-HETE), through lipoxygenase

pathway, from [^{3}H]arachidonic acid were evaluated by radiochromatographic analysis with rabbit platelet rich plasma *in vitro*. Collagen- or arachidinic acid-stimulated platelet aggregation was inhibited dose-dependent by piperine. However, U46619-, TxA_2 mimetics, or thrombin-stimulated platelet aggregation was almost no effect. Futhermore, piperine suppressed arachidonic acid liberation by [^{3}H] arachidonic acid-labled platelets exposed to collagen, indicating that it might affect phospholipase A_2 (PLA_2) activation on collagen-induced arachidonic acid liberation from membrane phospholipids. The compound also suppressed TxB_2 generation by collagen-induced platelet to which [^{3}H]arachidonic acid was added, whereas 12-HETE generation was enhanced. And the compound was almost no effect on PGD_2 generation. Therefore, we suggest that piperine may affect PLA_2 activation and cause suppression of cyclooxygenase which can stimulate 12-HETE production from arachidonic acid via lipoxygenase, thus eliciting an inhibition of platelet aggregation.

[PA1-42] [10/18/2001 (Thr) 14:00 - 17:00 / Hall D]

Antimicrobial and Cytotoxic activities of Lavandulyl Flavanone of Sophora flavesce

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The antimicrobial activity and cytotoxicity of ethyl acetate extract, and two isolated constituents of the dried roots of Sophora flavescens were investigated using broth dilution method. The maximum activity was exhibited by kurarinone against Streptococcus mutans, Staphylococcus epidermidis, Staphylococcus aureus, and Pseudomonas putida. Kurarinone was examined for cytotoxicity against several human tumor cell lines in vitro. This compound was found to show a cytotoxicity (IC50, of 36-42 ㎍/㎖) with exception of Gingival fibroblast with IC50 value of 106 ㎍/㎖.

[PA1-43] [10/18/2001 (Thr) 14:00 - 17:00 / Hall D]

Induction of the apoptosis of HL-60 promyelocytic leukemia cells by extract of *Eurya emarginata*

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The purpose of the present study is to examine the inhibitory effect of extracts of *Eurya emarginata* on the growth of HL-60 cells and to develop an anti-cancer agent using components of its leaves. To examine the inhibitory effect on the growth, metabolic activity was measured. In results, ethylacetate extract of its leaves markedly inhibited the growth of these cells. Also, its extract reduced c-myc mRNA levels. At the same time, DNA fragmentation was observed and the portion of apoptotic cells were increased in its extract-treated HL-60 cells. Therefore, inhibitory effect of *E. emarginata* on the growth of HL-60 seem to arise from the induction of apoptosis. In order to understand the mechanism of apoptosis by extract of *E. emarginata*, We have observed the level of expression of bcl-2 and bax. In results, the level of bcl-2 mRNA levels decreased in a time-dependent manner whereas the bax mRNA level exhibited no changes. The results indicate that extracts of *E. emarginata* induce apoptosis of HL-60 cells via down-modulation of bcl-2 mRNA as well as its gene product expression with no change in bax mRNA expression. [Supported by grant No. 2000-1-20800-002-3 from KOSEF]