due to the dopachrome tautomerase stimulation.

[PA1-46] [2003-10-10 14:00 - 17:30 / Grand Ballroom Pre-function]

Anti-inflammatory mechanism of melittin, a component of bee venom in Raw 264.7 cells and Synoviocyte

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Bee Venom (BV) has been treated in inflammatory diseases such as rheumatoid arthritis (RA). Bee venom contains several biologically active non-peptide substances as well as two major known peptides; the hemolytic peptide melittin (50%) and the neurotoxic peptide apamin, and a number of minor peptides. Previous our study showed that BV blocked LPS and SNP-induced production of NO and PG through inactivation of NF-κB which regulates expression of COX-2 and iNOS. In this study, we investigated whether melittin, a major componet of BV may play a critical role in the anti-inflammatory effect of BV. We investigated effect of melittin on lipopolysaccharide (LPS) and sodium nitroprusside (SNP)-induced induction of COX-2, cPLA2 and iNOS expression, and production of NO and PGE_2, and activation of NF-κB in a murine marcrophage cell line Raw 264.7 cell and synoviocytes. Similar to the effect of BV, melittin prevented LPS and SNP induced COX-2, cPLA2 and iNOS expression, and the production of NO and PGE_2 through inhibition of transcriptional and DNA binding activation of NF-κB. The inhibitory effect of melittin in some paramters tested was less extent compared to BV, but most of the inhibitory effects of melittin was comparable to the effect of BV, suggesting that melittin may be a causal effective componet of anti-inflammatory effect of BV.

[PA1-47] [2003-10-10 14:00 - 17:30 / Grand Ballroom Pre-function]

Effects of chlorhexidine digluconate on thickness of outer membranes isolated from Cultured Porphyromonas gingivalis.

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To get a better insight into the biophysical mechanism of action of chlorhexidine digluconate, we examined the effect of chlorhexidine digluconate on the thickness of outer membranes isolated from cultured Porphyromonas gingivalis using energy transfer between the membrane surface fluorescent probe (1-anilinonaphthalene-8-sulfonic acid) and the hydrophobic fluorescent probe [1,3-di(1-pyrenyl)propane]. 1-Anilinonaphthalene-8-sulfonic acid quenches the monomer fluorescence of 1,3-di(1-pyrenyl)propane. The significant decreases the thickness of lipid bilayer of the outer membranes by chlorhexidine digluconate were observed even at 0.01, 0.1, 1, 2, 3, 4, and 5 mM. It is presumed that the decrease of membrane thickness was resulted, as discovered in another studies of ours, from the fact that chlorhexidine digluconate caused increase in the rate and range of the lateral and rotational mobility of the membrane lipid bilayer, increased annular lipid fluidity and then resulted in clustering of membrane proteins. Reduction in the membrane thickness causes interdigitation between inner and outer monolayers of the lipid bilayer and membrane expansion and in turn, the membrane expansion accompanies changes of the membrane properties and functions. It is presumed that chlorhexidine digluconate exhibits its specific pharmacological effect by the biophysical mechanism descrived above.

[PA1-48] [2003-10-10 14:00 - 17:30 / Grand Ballroom Pre-function]

Differential regulation of phospholipase Cγ isoforms through FcεRI, high affinity IgE receptor

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The signaling components of high affinity IgE receptor (FcεRI) were searched by yeast-hybrid screening of the cDNA library constructed from RBL-2H3 cells. The cytoplasmic part of the FcεRI-β chain was found to specifically interact with PLCγ2, and further comparatives studies were conducted focusing on the differential regulation of two PLC- isoforms through FcεRI. The inhibitors of Src, Syk, and protein kinase C similarly affected the tyrosine phosphorylations of PLCγ1 and PLCγ2 but the inhibitors of PI3-kinase and p42/44 ERK effectively inhibited the activation of PLCγ1 but not PLCγ2. Our results provide for the first time the functional roles of the NH2-terminal of the chain in the signal transduction of FcRI, and the meaning for the existence of two closely related PLCγ isoforms in the mast cells.

[PA1-49] [2003-10-10 14:00 - 17:30 / Grand Ballroom Pre-function]

Protective effect of metabolized Chungpesagan-tang on Hypoxia/ Reperfusion induced-PC12 cell damage

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This research was performed to investigate the protective effect of Chungpesagan-tang (CPS) against ischemic damage in PC12 cells. To elucidate the mechanism of the protective effect of CPS on ischemic insult, cell viability and changes in activities of Superoxide dismutase, Glutathione Peroxidase, Catalase, Caspase 3 and the production of Malondialdehyde were observed after treating PC12 cells with CPS which was metabolized by rat liver homogenate. Pretreatment of CPS with liver homogenate increased its protective effect against ischemic insult by reducing the harmful effect of CPS itself. The result showed that CPS had the highest protective effect against hypoxia/reperfusion at the dose of 1 mg/ml in PC12 cells, probably by recovering the redox enzyme activities and MDA to control level. (Supported by HMP 01-PJ9-PG1-01CO03-0003 and BK21 project, Korea)

[PA1-50] [2003-10-10 14:00 - 17:30 / Grand Ballroom Pre-function]

CJ-11668, A new selective and potent COX-2 inhibitor, reduces inflamation, fever and pain in animal models

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CJ-11668 is a new potent and selective COX-2 inhibitor. CJ-11668 showed COX-2 inhibition (IC50) of 65nM and selectivity ratio (COX-1/COX-2) of 770 in the cell based assay. In the human whole blood assay, CJ-11668 showed COX-2 inhibition (IC50) of 370nM and selectivity ratio (COX-1/COX-2), 135. The treatment of CJ-11668 (5 mg/kg, p.o.) produced a significant inhibition (35%) of inflamed rat paw volume in the carrageenan-induced acute inflammation. CJ-11668 also suppressed the PGE2 level (69% inhibition, 1 mg/kg, p.o.) in the zymosan-induced mouse air pouch model after 3 hrs. Furthermore, CJ-11668 showed a prolonged effect (36% inhibition, 1 mg/kg, p.o.) at 12 hrs post-dosing, whereas the same dose of Celebrex had no effect. The anti-fever and anti-hyperalgesia effects were also determined in rats. In conclusion, CJ-11668 is a selective COX-2 inhibitor with potent anti-inflammatory, anti-pyretic and analgesic activity.

[PA1-51] [2003-10-10 14:00 - 17:30 / Grand Ballroom Pre-function]

Calcium signal dependent cell death by presenlin-2 mutation in PC12 cells and in cortical neuron from presenlin-2 mutation transgenic mice

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