collagen- and AA-stimulated platelet aggregation in a dose-dependent manner, but did not affect U46619-, or thrombin-stimulated platelet aggregation. Carvacrol did not suppress collagen-induced arachidonic acid liberation from [^{3}H]AA-labeled platelets, indicating that it has no effect on phospholipase A_2 (FLA_2) activation in response to collagen. Furthermore, carvacrol significantly suppressed the TXB_2 generation induced by addition of [^{3}H]AA, but had no influence on PGD_2 and 12-HETE generation.
These results suggest that carvacrol inhibits collagen- and AA-stimulated platelet aggregation probably through suppression of TXB_2 generation.

[PC1-11] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Cell cycle arrest effect of manassatin B on human leukemia cell line HL-60

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Manassatin B, isolated from Saururus chinensis, showed significant dose-and time-dependent antiproliferative activity against HL-60 cell by BrdU incorporation assay. At 5 ug/ml manassatin B treated cells, G1 phase cell cycle was mainly arrested via p21Waf1 induction, not p27Kip1. Futhermore, we investigate the downstream signal transduction following such accumulation. The protein level of cdk6, cyclin D1 was markedly reduced, but there is no change in CDK 2/4 and cyclin D/E protein expression level. Cdk 2 activity was significantly inhibited in manassatin-treated cell, these effect was closely associated with the upregulation of p21. Immunoprecipitation experiments verified that p21 was indeed complexed with cdk 2.
These results suggest that decreased cdk 6, cyclin D1 protein level and increased p21WAF1 associated with CDK2 induce pRb dephosphorylation. In turn, hypophosphorylated pRb are mainly complexed with E2F and then G1 to S phase transition is inhibited. So, Manassatin has a strong cell cycle arrest effect in G1 phase on human leukemic HL-60 cell.

[PC1-12] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

The inhibitory effects of six natural products on tyrosinase activity

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To identify inhibitors of melanogenesis, we compared the effects of 6 natural products on mushroom tyrosinase, human melanocytic tyrosinase activity. The cytotoxicity of the products were also tested on cultured B16F10 mouse melanoma cells.
Each extract significantly inhibited tyrosinase activity in vitro and B16F10 melanoma cell line. In B16F10 cell lines, extracts of watermelon's inner shell(1mg/ml), morning glory's seed(0.25mg/ml), licorice root (0.25mg/ml) inhibited tyrosinase activity as strong as kojic acid(1mg/ml).
They were strong inhibitors of tyrosinase activity in B16 mouse melanoma cell lines at less than 1mg/ml concentration.
These results show that extract of watermelon's inner shells, morning glory's seeds, licorice roots, ginkoes, lettuces could be developed as skin whitening component of cosmetics.

[PC1-13] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Effects of chitosan on renal dipeptidase release from renal proximal tubules

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Renal dipeptidase (RDPase, EC 3.4.13.19), an ectoenzyme of renal proximal tubules, is covalently bound to outer leaflet of lipid bilayer via glycosylphosphatidylinositol (GPI)-anchor. The biological role of RDPase was suggested as the hydrolysis of dipeptide into free-amino acids before renal reabsorption. Chitin is a major component of the shells of crustacea such as crab, shrimp and crawfish. This study was investigated to examine the effect of chitosan, a deacetylated derivative of chitin which is the second most abundant natural biopolymer, on RDPase release from renal proximal tubules. Porcine proximal tubules were prepared with the protocol of Taub et al (1990) and were treated with chitosan (0.01, 0.1 and 1%) for 30 min at 37℃ followed by centrifugation (18000g, 5min). The activity of released RDPase was assayed according to the fluorometric method of Ito et al (1984). It was observed that the RDPase release was increased as a function of chitosan concentration, up to approximately 2.5-folds at 1% of chitosan. Although we do not understand the mechanism of this increase, the results suggest that chitosan may elevate the renal function related to reabsorption of amino acids.

[PC1-14] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Antiplatelet Effect of Green Tea Catechins may be due to Inhibition of PLA2 Activity

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Green tea is the dried young leaves of Camellia sinensis, also known as thea sinensis L., an infusion of which is widely consumed as a beverage. Green tea constituents, especially green tea catechins (GTC), exhibit a range of pharmacologic effects including anticarcinogenic activity and prevention of cardiovascular diseases. We have previously reported that GTC showed antithrombotic activity and that this antithrombotic action might be due to antiplatelet rather than anticoagulation effects. In this study the effect of GTC on the arachidonic acid (AA)pathway was investigated. GTC inhibited the platelet aggregation induced by AA (50 μ M) in a concentration-dependent manner with IC_{50} value of 0.58±0.02 mg/ml. GTC inhibited the phospholipase A_2 (PLA_2) activity in a concentration-dependent manner. Pretreatment of GTC decreased the collagen-induced AA release in [^{3}H]-AA incorporated platelet by an inhibition of the PLA_2 activity. GTC also inhibited the formation of TXA_2 and release of ATP caused by AA.
These results suggest that the antiplatelet mechanism of GTC may be mediated by inhibition of PLA_2 activity which leads to the AA release, TXA_2 formation and inhibition of ATP release.

[PC1-15] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Essential Oils Inhibit the LPS-Induced Production of Nitiric Oxide in Raw 264.7 Macrophages

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We investigated the effect of various essential oils on nitric oxide(NO) production in murine macrophage-like, RAW 264.7 cells. NO is important mediator in the pathogenesis of inflammatory disease. Our study was undertaken to screen the inhibition of NO production by essential oils isolated from various plants in RAW 264.7 cell. Two essential oils from Ligularia fischeri and Chrysanthemum zawadskii significantly inhibited the LPS-induced NO and prostaglandin E2(PGE2) generation in Raw 264.7 cells. Furthermore, protein expression level of iNOS and COX-2 was then reduced in concentration-dependent manner. We are further investigating the mRNA level by RT-PCR and NF-κB regulation.

[PC1-16] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]