Nuclear factor \( \kappa B \) (NF-\( \kappa B \)) represents a family of eukaryotic transcription factors participating in the regulation of various cellular genes. Since aberrant regulation of NF-\( \kappa B \) has been implicated in the pathogenesis of various diseases including inflammation, asthma, atherosclerosis, AIDS, septic shock, arthritis, and cancer, this transcription factor has been shown to be an interesting target of new drug discovery. While searching for NF-\( \kappa B \) modulators from natural resources, we found that an ethyl acetate extract of the culture broth of fungi \( \text{B00527} \) activated NF-\( \kappa B \) activity as assessed by a NF-\( \kappa B \) reporter assay. Two closely related trichothecenes, Harzianum A (1) and a new compound Harzianum B (2), were identified as the active principles by activity-guided fractionation. The structure of 1 and 2 was determined by extensive spectral analyses including EI-MS, \( ^1 \text{H} \) and \( ^{13} \text{C} \)-NMR, HMQC. Compound 2 contains a \((E, Z, E)-2, 4, 6\)-octatrienic acid esterified on the 4 beta-hydroxyl group of trichodermol. These two compounds significantly increased NF-\( \kappa B \) activity in RAW264.7 cells transfected with NF-\( \kappa B \) reporter construct in a dose-dependent manner with \( \text{ED}_{50} \) values of 0.01 \( \mu \text{g/ml} \) and 0.1 \( \mu \text{g/ml} \) respectively, without affecting cell viability. Furthermore, treatment of compound 1 to RAW264.7 cells induced the degradation of \( \text{IkB} \) as well as DNA-binding activity of NF-\( \kappa B \).

[PC1-26] [ 10/17/2002 (Thr) 13:30 - 16:30 / Hall C ]

The effects of some natural products on mouse melanoma cells in vitro

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To indentify inhibitors of melanogenesis, we compared the effect of some natural products on mushroom tyrosinase, human melanocytic tyrosinase activity and melanin content. The cytotoxicity of the component were also tested on cultured mouse melanoma cells. Each extract significantly inhibited tyrosinase activity and melanin synthesis in vitro and B 16 melanoma cell lines. In B 16 cell lines, watermelon’s inner shell extract inhibited tyrosinase activity as strong as kojic acid at 150 \( \mu \text{g/ml} \) concentration. And morning glory’s seed extract inhibited melanin synthesis more than kojic acid at 150 \( \mu \text{g/ml} \) concentration. Each extract were strong inhibitors of tyrosinase activity and total melanin synthesis in B 16 mouse melanoma cell lines at less than 100 \( \mu \text{g/ml} \) concentration. These result show that extract of watermelon’s inner shell, lettuce, morning glory’s seed and licorice root could be developed as skin whitening component of cosmetics.

[PC1-27] [ 10/17/2002 (Thr) 13:30 - 16:30 / Hall C ]

Inhibitory effects of a new iridoids, patridoid I and II on TNF, iNOS and COX-2 expression in cultured murine macrophages

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Possible role of anti-inflammatory effects of a new iridoids, patridoid I, II and II-A which were isolated from Patrina saniculifolia, examined by assessing their effects on tumor necrosis factor \( \alpha \) (TNF\( \alpha \)) and 2 enzymes, inducible nitric oxide synthase (iNOS) and cyclooxygenase-2 (COX-2) in the lipopolysaccaride (LPS) stimulated murine macrophage-like cell line RAW 264.7. Among them, patridoid II consistently inhibited the production of TNF\( \alpha \) and NO production in a dose dependent manner. But patridoid I and patridoid II isomer patridoid II-A, these compounds very weakly inhibited NO production. Moreover, treatment of macrophage with these compounds, the decrease in NO products was accompanied by a decrease in iNOS protein level as assessed by Western Blot. But these compounds did not effect COX-2 protein expression in LPS-stimulated macrophage. Our results suggest that patridoid II could become a leading compound for developing a novel type of anti-inflammatory drugs.

[PC1-28] [ 10/17/2002 (Thr) 13:30 - 16:30 / Hall C ]
Tyrosine kinase inhibitors reverse lawsone methyl ether stimulation of renal dipeptidase release but not of alkaline phosphatase release.

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Lawsone methyl ether (LME, 2-methoxy-1,4-naphthoquinone) is a natural compound found in balsaminaceae. In this study the effect of LME on the release of renal dipeptidase (RDPase) and alkaline phosphatase (APase) known as glycosylphosphatidylinositol (GPI) anchored proteins was examined from the renal proximal tubules. Compared with control, LME (0.5mM) increased RDPase release (218%) and APase release (135%). The increase of RDPase release by LME showed concentration-dependent effect but the release pattern of APase did not. It was also confirmed by time-dependent manner. Signaling via several GPI anchored proteins is known to be mediated mostly via cytoplasmic molecules such as protein tyrosine kinases or trimeric G-protein. Therefore we investigated that the influence of LME might involve intracellular phosphorylation using genistein and herbimycin A, tyrosine kinase inhibitors. Genistein and herbimycin A treatment completely abolished the stimulatory effect of LME on RDPase release. On the contrary, both of tyrosine kinase inhibitors elevated the release of alkaline phosphatase in comparison with the group of LME control. Different pathways are likely to regulate the effect of LME on the RDPase and APase release. LME stimulation of RDPase, but not APase, may involve tyrosine phosphorylation signaling.

[PC1-29] [ 10/17/2002 (Thur) 13:30 - 16:30 / Hall C ]

The Lipidperoxidative effect of Houttuynia cordata Thunb & Saururus chinensis

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Houttuynia cordata Thunb is a traditional medicine which has been used as antidote and antiphlogistic agent. Saururus chinensis is a perennial herb which cultivated as medicinal and decorative use, the aerial part of which have been used for the treatment of edema, jaundice and gonorrhoea in Korean folk medicine. The lipid peroxidation inhibition effects of Houttuynia cordata Thunb, Saururus chinensis Leaf, H. cordata, S. chinensis Root and H. cordata, S. chinensis Fermentation were investigated in the levels of liver tissue total homogenates and serum of SD-rats intoxicated with carbon tetrachloride (CCl4). The rats were intraperitoneally given Houttuynia cordata Thunb and Saururus chinensis at dose of 100mg/kg daily for two weeks. Aspartate aminotransferase(AST), Alanine aminotransferase(ALT), Total cholesterol, HDL. LDL-cholesterol. Total lipid. Triglyceride were determined in serum. MDA levels were determined in the liver. The results showed that Houttuynia cordata Thunb and Saururus chinensis inhibited lipid peroxidation.

[PC1-30] [ 10/17/2002 (Thur) 13:30 - 16:30 / Hall C ]

Curcumin Inhibits Phorbol Ester-induced Expression of Cyclooxygenase-2 In Vivo through Suppression of Extracelluar Signal-regulated Kinase (ERK)1/2 and NF-κB in Mouse Skin

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Curcumin derived from turmeric (Curcuma longa L., Zingiberaceae) has been shown to possess marked chemopreventive activities, but the underlying molecular mechanisms remain unclear. In the present work, curcumin was found to inhibit 12-0-tetradecanoylphorbol-13-acetate (TPA)-induced expression of cyclooxygenase-2 (COX-2) in female ICR mouse skin as determined by Western and Northern blot analysis as well as immunohistochemical staining. Curcumin treatment attenuated TPA-stimulated epidermal NF-κB activation, which was associated with its blockade of degradation and phosphorylation of the inhibitory protein IκBα and also of subsequent translocation of the p65 subunit to nucleus. Curcumin also inhibited activation of ERK1/2 and p38 MAP kinase in mouse skin. In this study, we further examined the roles of p38 and ERK in TPA-