Bcl-2 levels was concentration -dependant decreased by costunolide and further we found that antioxidant, N-acetyl cystein(NAC) treatment attenuated costunolide-induced cytotoxicity and apoptosis. These results suggest that ROS and caspase-3 protease mediated signal transduction are essential for costunolide-induced apoptosis.

[PC1-11] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

CURCUMIN INHIBITS EXPRESSION OF CYCLOOXYGENASE-2 AND INDUCIBLE NITRIC OXIDE SYNTHASE AND ACTIVATION OF NF-kappaB AND AP-1 TRANSCRIPTION FACTORS

Chun Kyung-Soo, Keum Young-Sam, Han Seong-Su, Seo Hyo-Joung, Lee Jeewoo, and Surh Young-Joon

College fo Pharmacy, Seoul National University, Seoul, Korea

Recently, considerable attention has been focussed on identifying edible and medicinal phytochemicals that retain chemopreventive activities. Spices and herbs contain phenolic substances with potent antioxidative and anti-inflammatory properties. Curcumin, a yellow colouring ingredient of turmeric (*Curcuma longa* L., Zingiberaceae), has been shown to inhibit experimental carcinogenesis and mutagenesis, but molecular mechanisms underlying its chemopreventive effects remain unclear. In the present work, we have examined the effects of curcumin on expression of cyclooxygenase-2 (COX-2) and inducible nitric oxide synthase (iNOS) which play a important role in mediating inflammatory responses. Topical application of the tumor promoter, 12-*O*-tetradecanoylphorbol-13-acetate (TPA) onto shaven backs of female ICR mice induced epidermal expression of COX-2 and iNOS proteins and their mRNA in a time-related manner. Curcumin, when topically given 30 min prior to TPA, significantly suppressed TPA-induced COX-2 and iNOS expression at both transcriptional and translational levels. Yakuchinone A and Yakuchinone B, pungent diarylheptanoids derived from *Alpinia oxyphylla* Miquel (Zingiberaceae) also exhibited inhibitory effects on epidermal expression of COX-2 and iNOS in mice treated with TPA. Curcumin pretreatment resulted in attenuation of TPA-induced activation of NF-kappa B in mouse epidermis. Curcumin-mediated inactivation of NF-kappa B appears to be associated with its suppression of I-kappa B degradation and subsequent nuclear translocation of the functionally active subunit, p65 as well as direct interference with DNA binding of NF-kappa B. Likewise, TPA-stimulated activation of another transcription factor, activator protein-1 (AP-1) was inhibited by curcumin pretreatment. Similar down-regulation of NF-kappa B and AP-1 by curcumin was observed in cultured human promyelocytic leukemia (HL-60) cells stimulated with TPA. Taken together, the results of this study may provide molecular basis of cancer chemopreventive properties of curcumin.

[PC1-12] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Zaluzanin-C and Estafiatone from Anisliaea acerifolia inhibit of LPS and IFN-ɣ-induced Nitric Oxide Synthase expression and production of PGE2 in RAW 264.7 cell

Yoon JW°, Ahn SH, Shin SK, *Hong SY.# Lee HY, Zee OP, Lee KR, Han JW, Lee HW

College of Pharmacy, *Department of Genetic Engineering, Sungkyunkwan University,#Department of Medicine Konyang University

Nitric Oxide (NO) is an important regulator and effector molecule in various inflammatory disease states. High output of NO during inflammation is generated by the inducible NO Synthase (iNOS) and increases production of prostglandin E_2 (PGE_2) through the activation the cyclooxygenase-2 (COX-2) in macrophage. PGE_2 is important mediators of inflammation, vasodilatation, pain and pyrexia. Thus inhibitors of iNOS could be a novel candidate as anti-inflammatory drug. In this study, we

determined if the two compounds, Zaluzanin-C and Estafiatone isolated from *Anisliaea acerifolia*, modulate iNOS gene expression and PGE_2 synsthesis in LPS/IFN-γ-stimulated RAW 264.7 cell. Treatment with two compounds inhibited NO production, PGE_2 synthesis a concentration-dependent manner. Furthermore, two compounds inhibit iNOS protein and mRNA expression. These results of two compounds may provide the possibility for developing anti-inflammatory agents.

[PC1-13] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Development of the On-site Assay for Methamphetamine

Choi JE[o1], Kim CM[2], Lee JR[1], and Choi MJ[1]

[1]Bioanalysis & Biotransformation Research Center, Korea Institute of Science and Technology, P.O. Box 131 Cheongryang, Seoul 130-650, Korea, [2]College of Pharmacy, Ewha Womans University, Seoul 120-750, Korea

Methamphetamine (MA) abuse has become a serious social concern, particularly in Asia, since it is a potent central nervous stimulant. Confirmation of MA abuse in biological samples has usually been performed using instruments such as GC/MS. It, however, requires great expertise and a considerate amount of time to obtain the result.
For the purpose of fast screening of a large number of samples on the field, we have developed an on-site detection kit based on the membrane immunoassay. Colloidal gold was used as a tracer, and conjugated with the anti-MA antibody (Ab). It was designed so that the Ab-gold conjugate could bind either MA in sample or the MA-BSA conjugate attached to the membrane while it migrate along the strip together with the sample.
The positive/negative result could be read by the naked eye within three minutes without any expertise. The kit developed was allowed to detect MA lower than 1 μg/ml with 150 μl of sample. Evaluation study showed that the strip was stable more than eight months at RT under the desiccated condition. The result of the strip correlated with that of the fluorescence polarization immunoassay by over than 90 %.

[PC1-14] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Regulation of cell growth by transmethylation inhibitor

Seo DW[o], Kim YK, Ahn SH, Hong SY*, Lee HY#, Han JW, Lee HW

College of Pharmacy, * Department of Genetic Engineering, Sungkyunkwan University, #Department of Medicine, Konyang University

Oligosaccharide-linked acyl carrier protein (ACP) purified from porcine liver was identified as a nove transmethylation inhibitor. In cell-free systems, it might act as a noncompetitive inhibitor of the protein carboxyl-*O*-methyltransferase which methylates the Asp or Glu residue in a large number of proteins. Oligosaccharide-linked ACP is a weak inhibitor of methylation *in vitro*, however, can significantly inhibit the growth of various cancer cell lines including NIH3T3, H-ras-transformed NIH3T3, MDA-MB-231, HT-1376, and AGS. In addition, exposure of H-*ras*-transformed NIH3T3 with oligosaccharide-linked ACP caused cell cycle arrest at S phase and subsequently cumulative increase of cells at G_0/G_1 phase determined by flow cytometry. Study of this tramsmethylation inhibitor could be a useful tool for elucidating regulation mechanism of methylation on cell growth.

[PC1-15] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Nitric Oxide inhibits the release of GPI-anchored renal dipeptidase via