

tumor cell metastasis. CK clearly inhibited both B16F10 melanoma cell adhesion to the extracellular matrix proteins as well as invasion through Matrigel-coated filter. In addition, CK significantly inhibited the proliferation of B16F10 melanoma cells on the plate in a dose-dependent manner. In vivo B16F10 melanoma experimental metastasis, CK showed remarkable inhibitory effects on the lung tumor colonization in a dose-dependent manner. These results demonstrate that anti-metastatic and anti-angiogenetic activity of CK resulted from blocking proliferation of the melanoma cells.

[PA4-19] [04/17/2003 (Thr) 14:00 - 17:00 / Hall P]

Genotoxicity Study of sophoricoside in bacterial and mammalian cells system

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Sophoricoside was isolated as the inhibitor of IL-5 bioactivity from *Sophora japonica* (Leguminosae). It has been reported to have an anti-inflammatory effect on rat paw edema model. To develop as an anti-allergic drug, genotoxicity of sophoricoside was investigated in bacterial and mammalian cell system such as Ames bacterial test and mouse lymphoma *tk* gene assay (MOLY). In Ames test, sophoricoside of 5,000 ~ 313 µg/plate concentrations was not shown significant mutagenic effect in Salmonella typhimurium TA98, TA100, TA1535 and TA1537 strains. Also in MOLY assay, sophoricoside of 5,000 ~ 313 µg/ml concentrations was not shown significant mutagenic effect in absence of S-9 metabolic activation system. However, the higher concentration of 5,000 and 2,500 µg/ml of sophoricoside induced the increased mutation frequency (MF) in the presence of S-9 metabolic activation system. From these results, no genotoxic effects of sophoricoside observed in bacterial systems whereas, genotoxic effects observed in mammalian cell systems. These results suggested that the metabolite(s) of sophoricoside can cause some genotoxic effects in mammalian cells.

[PA4-20] [04/17/2003 (Thr) 14:00 - 17:00 / Hall P]

Estrogenic activity of Pomegranate extract in MCF7-ERE cells

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Pomegranate, a small tree originating in Orient, belongs to Punicaceae family. The seeds contain an oil of which about 80% is rare trans 18 carbon fatty acid (punicic acid), and have highest botanical concentration of a sex steroid, estrone. Pharmacological properties of pomegranate extract have been studied, with anti-microbial, anti-parasitic, anti-viral, and anti-cancer effects.

We have examined the estrogenic activity of the pomegranate extracts using MCF-7-ERE cells. MCF-7-ERE cells, stably transfected with pERE-Luc were treated various amount of pomegranate extract and after overnight treatments, luciferase activity were measured. Estradiol (E2) dose dependently induced luciferase activity in this cell and maximal response is obtained at 100pM E2.

82-A, 80-A extract of pomegranate showed stronger estrogenic activity than that of 100pM E2.

And 40, 41, 44 (EtOH bot seed, fer jui polyphenols, scf peric polyphenol) showed about half inductive effect as compared to 100pM E2. These increase in luciferase activity by pomegranate was inhibited by Tamoxifene concomitant treatment. Therefore is reasonable to interpret that pomegranate extract increased luciferase activity via ER.

[PA4-21] [04/17/2003 (Thr) 14:00 - 17:00 / Hall P]

Cytotoxic Activity of Extracts from *Houttuynia cordata*

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This study was carried out to evaluate cytotoxic effects of *Houttuynia cordata* THUNB extracts on A549 (lung cancer), MDA-MB231 (breast cancer), SNU-C4 (colon cancer) and B16 (mouse melanoma) cell lines. We have determined by 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl-2H-tetrazoliumbromide (MTT) assay. The 150 $\mu\text{g}/\text{ml}$ concentration of methanol extract (63.81 %) of *Houttuynia cordata* THUNB was shown significantly antitoxic activity on A549 cell lines. The order of cytotoxicity of *Houttuynia cordata* THUNB extracts against cancer cell lines in vitro is as follows : hexane fraction layer > chloroform fraction layer > ethyl acetate fraction layer > buthanol fraction layer > water fraction layer. These results suggest that the hexane fraction of *Houttuynia cordata* THUNB extract may be a valuable choice for the development of antitumor agents.

[PA4-22] [04/17/2003 (Thr) 14:00 - 17:00 / Hall P]

Genotoxicity Study of sophoricoside derivatives in mammalian cells system

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To develop the novel anti-allergic drug, many sophoricoside derivatives were synthesized. Among these derivatives, JSH-II-3, JSH-VI-3, JSH-VII-3, and JSH-VIII-3 were selected and subjected to high throughput toxicity screening (HTTS) because they revealed strong IL-5 inhibitory activity and limitation of quantity. Mouse lymphoma thymidine kinase (*tk^{+/-}*) gene assay (MOLY) and single cell gel electrophoresis (Comet) assay in mammalian cells were used as HTTS tool in our laboratory. In MOLY assay, JSH-VII-3 at 50 ~ 6 $\mu\text{g}/\text{ml}$ concentrations was not shown significant mutagenic effect in the absence and presence of S-9 metabolic activation system. However, the concentration of JSH-II-3, 38 $\mu\text{g}/\text{ml}$, induced increased mutation frequency (MF) in the presence of S-9 metabolic activation system. Also in comet assay, DNA damage was not observed in JSH-VI-3 and JSH-VII-3, wherase concentration of 32.8 $\mu\text{g}/\text{ml}$ in JSH-II-3 and 13.9 $\mu\text{g}/\text{ml}$ in JSH-VII-3 were induced DNA damage in the absence of S-9 metabolic activation system. Therefore, we suggest that JSH-VI-3 and JSH-VII-3 have no genotoxic effects but JSH-II-3 and JSH-VIII-3 induce some mutagenicity and DNA strand breaks in mouse lymphoma cell line used this study.