liver injury. In the present study, we assayed the preventive and therapeutic effects of CK on experimental hepatic fibrosis induced by dimethylnitrosamine or carbon tetrachloride in rats. Rats were given a single intraperitoneal injection of 20 mg/kg dimethylnitrosamine or 0.5 ml/kg carbon tetrachloride twice weekly for 4 weeks. In each model, CK was given orally at 10-200 mg/kg daily for 4 weeks. CK reduced the hepatic levels of malondialdehyde, a production of lipid peroxidation and partially prevented the marked decrease in body weight and reduced the mortality rate. The degree of fibrosis was evaluated by image analysis and also by measurements of collagen and hydroxyproline content in the liver. CK treatment significantly decreased the dimethylnitrosamine- or carbon tetrachloride-induced collagen and hydroxyproline contents. Immunohistochemical examination showed that CK reduced the deposition of type I and III collagen and the expression of a-smooth muscle actin in the liver in a dose-dependent manner. These findings indicate that CK suppress the induction of hepatic fibrosis and suggest that CK might be useful therapeutically in hepatic fibrosis/cirrhosis.

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

Inhibition of hepatic stellate cell collagen synthesis by an aqueous extract isolated from Platycodon grandiflorum

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The protective effects on hepatic fibrosis of an aqueous extract from the roots of Platycodon grandiflorum A. DC (Campanulaceae), Changkil (CK), in hepatic stellate cell line, CFSC-2G. The increased deposition of extracellular matrix by hepatic stellate cells following liver injury in a process known as activation is considered a key mechanism for increased collagen content of liver during the development of liver fibrosis. We report that CK reduces the accumulation of collagen in a rat model of liver injury and fibrosis. The accumulation and synthesis of collagen were measured by Marson-Trichrom stain and pulse-labeling with [3H]-proline, respectively. As the results, CK inhibited collagen accumulation in a dose dependent manner. Furthermore, CK selectively inhibited the incorporation of proline in CFSC-2G. In vivo, oral administration of CK to rats significantly reduced the hepatic collagen accumulation in response to dimethylnitrosamine (DMN)-induced liver injury. The effect of CK on collagen accumulation and expression of alpha-smooth muscle actin (a-SMA) in vivo was evaluated utilizing a rat model of hepatic fibrosis. CK reduced collagen contents and a-SMA expressions compared with the. These results suggested that the protective effects of CK on the hepatic fibrosis in stellate cell line may, at least in part, be due to its ability to reduce the accumulation of collagen and blocked activation of stellate cells in DMN-induced liver fibrosis.

[PA4-18] [04/17/2003 (Thr) 14:00 - 17:00 / Hall P]

Suppressive Mechanism of Platycodi Radix in B16F10 Melanoma Cell Metastasis

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Herbal medicines are increasingly being utilized to treat a wide variety of disease processes. In this study, we assayed the preventive and therapeutic effects of aqueous extract from the roots of Platycodon grandilflorum A. DC, Changil (CK) on experimental metastasis induced by melanoma cell (B16F10) in C56BL6 mice. The functional specificity of CK was investigated in

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 develope 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 ㎍/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 ㎍/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 ㎍/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.