

determined even at the maximal administrable dosage, 4mL/kg, due to the high viscosity of chemical and there was no significant change in body weight, hematological and serum biochemical analysis, organ weight, and histopathological examination compared with that of Cremophor EL. For the repeated dose toxicity test, male and female mice were given the dosage of 0, 1.6mL Cremophor EL/kg body weight/day, and 1.6mL Aceporol 460/kg body weight/day for 2 weeks. Results of repeated dose toxicity tests for 2 weeks suggested that Aceporol 460 treated group show no significant toxicological findings with body weight, hematological and serum biochemical analysis, organ weight, urinalysis, and ophthalmoscopic and histopathological examination compared with that of Cremophor EL. These results indicate that Aceporol 460 have higher paclitaxel-loading capacity than Aceporol 330 and less toxic effects than Cremophor EL in male and female mice.

[PA4-9] [10/18/2002 (Fri) 09:30 – 12:30 / Hall C]

Effects of aqueous extract isolated from *Platycodon grandiflorum* against oxidative stress in rat primary hepatocytes

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Herbal medicines are increasingly being utilized to treat a wide variety of disease processes. The aim of this study was to evaluate the ability of aqueous extract from the roots of *Platycodon grandiflorum* A. DC (Campanulaceae), Changkil (CK), to affect cellular response in primary cultures of rat hepatocytes to t-butyl hydroperoxide (t-BHP) induced oxidative stress and hepatotoxicity. CK-treated cells showed an increased resistance to oxidative challenge, as revealed by a higher percent of survival capacity in respect to control cells. CK added prior or simultaneously with t-BHP reduced enhanced lipid peroxidation measured as production of malondialdehyde and enhanced intracellular reduced glutathione depletion by t-BHP. Furthermore, CK protected from the t-BHP-induced intracellular generation of reactive oxygen species assessed by monitoring dichlorodihydrofluorescein fluorescence. It can be concluded that CK exerts an antioxidant action inside the cell, responsible for the observed modulation of the cellular response to oxidative challenge, and CK have a marked antioxidative and hepatoprotective potency.

[PA4-10] [10/18/2002 (Fri) 09:30 – 12:30 / Hall C]

Effects of *Platycodi Radix* on dimethylnitrosamine-induced hepatic fibrosis in rats

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Herbal medicines are increasingly being utilized to treat a wide variety of disease processes. We previously reported that aqueous extract from the roots of *Platycodon grandiflorum* A. DC (Campanulaceae), Changkil (CK), had hepatoprotective effects against acetaminophen induced liver injury. In the present study, we assayed the preventive and therapeutic effects of CK on experimental hepatic fibrosis induced by dimethylnitrosamine (DMN) in rats. Rats were given a single intraperitoneal injection of 20 mg/kg DMN twice weekly for 4 weeks. CK was given orally at 10–200 mg/kg daily for 4 weeks after the first injection of DMN. 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. The expression of α -smooth muscle actin (α -SMA) in the liver was also evaluated. CK treatment significantly decreased the occurrence of DMN-induced hepatic fibrosis and reduced the collagen and hydroxyproline content and α -SMA expression in the liver. These findings indicate that CK suppress the induction of hepatic fibrosis and suggest that CK might be useful therapeutically in hepatic fibrosis/cirrhosis.

[PA4-11] [10/18/2002 (Fri) 09:30 – 12:30 / Hall C]

Protective effect of *Platycodon grandiflorum* against t-butyl hydroperoxide-induced hepatic toxicity in rats