

of liver fibrosis. In this study, we investigated the protective effects of an aqueous extract from the roots of *Platycodon grandiflorum* A. DC (Campanulaceae), Changkil (CK), on hepatic fibrosis in hepatic stellate cells. We report that CK reduces the accumulation of collagen in acetaldehyde-induced hepatic stellate cells. 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 and incorporation of proline in a dose dependent manner. Furthermore, the effects of CK on expression of alpha-smooth muscle actin (a-SMA) and collagen type I were evaluated utilizing immunocytochemistry. CK reduced a-SMA and collagen type I expressions compared with acetaldehyde-induced hepatic stellate cells. These results suggested that the protective effects of CK on the hepatic fibrosis in stellate cells might, at least in part, be due to its ability to reduce the accumulation of collagen and blocked activation of hepatic stellate cells by acetaldehyde.

[PA4-7] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]

Effects of Mancozeb on cell-mediated immunity in mice.

Chung AeHee^o, Pyo MyoungYun

Seoul Metropolitan Government Research Institute of Public Health & Environment and Sookmyung Women's University

Mancozeb is a protective fungicide on plants and a polymeric complex of ethylene bisdithiocarbamate manganese with zinc salt. It is reported to induce teratogenic and carcinogenic effect in laboratory animals. But the immunomodulating effects of Mancozeb exposure have not been systemically evaluated. The purpose of this study was to investigate the effects of Mancozeb on cell-mediated immunity in mice. For ex vivo assessment, mice were orally exposed to Mancozeb dissolved in distilled water as concentrations of 2,500, 5,000, 10,000 mg/kg for single occasion (acute exposure) or 250, 1,000, 1,500 mg/kg/day 5 days a week for 30days(subacute). Splenocyte proliferation was significantly suppressed through T cell mitogen supplementation. IFN- γ production was decreased both acute and subacute exposure, IL-4 production was increased in subacute exposure. These results suggest that Mancozeb could alter cell-mediated immunity in mice.

[PA4-8] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]

The Effect of 3-MCPD on Male Fertility and Sperm Parameters in Rats

Kwack Seung Jun^o, Kim Soon Sun, Rhee Gyu Seek, Lee Rhee Da, Chae Soo Young, Choi Yo Woo, Lee Hyun Joo, Park Kui Lea
NITR, FDA

3-Monochloro-1,2-propanediol(3-MCPD) is a toxic compound, often present in different foods containing acid hydrolyzed(AH) protein, like seasonings and savory food products. In Korea, 3-MCPD is currently being a problem because of its toxicity in AH soybean sauce. The purpose of the present studies was to investigate the effects of 3-MCPD on male fertility, sperm and testosterone secretion. In vivo male fertility test was performed for observing the adverse effects of 3-MCPD on the function of male reproductive system and pregnancy outcome. 0.01, 0.05, 0.25, 1 and 5 mg/kg bw of 3-MCPD were given daily by gavage to groups of 15 adult male SD rats for 4 weeks. At the end of pre-treatment period, males were mated overnight with untreated females. Following morning, males demonstrating successful induction of pregnancy were sacrificed on that day to assess sperm parameters and histopathology of reproductive organs. The resulting pregnant females were sacrificed on day 20 of gestation to evaluate pregnancy outcome. As a result, four-week paternal administration with 3-MCPD resulted in adverse effects on male fertility and pregnancy outcome without remarkable histopathological changes in testes and epididymides; sperm motility, copulation index and fertility index were markedly decreased in the treated group and numbers of live fetuses showed steep dose-response curves. Also, spermatogenesis was investigated in this experiment. However, no effect was observed on production of sperm in testes treated with 3-MCPD for 4 weeks. Hormone assay was performed for observing the effects of 3-MCPD on testosterone and luteinizing hormone(LH) in blood and testes of male SD rats and cultured primary Leydig cell. In result, significant change of related hormones did not observed by treatment of 3-MCPD. These results indicated that paternal treatment with