induced aging. Moreover, inflammation and cirrhosis in liver tissue of CS treated group were significantly decreased.
These results suggest that CS might be a useful candidate for antioxidative reagent.

[PA4-13] [10/18/2001 (Thr) 14:00 - 17:00 / Hall D]

Preventive Effect of Saponins from Puerariae Radix and Panax Ginseng on the Hepatotoxicity

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Puerariae Radix and Panax Ginseng are used in traditional oriental medicine for various medicinal purposes. Preventive effects of saponins obtained from Puerariae Radix and Panax Ginseng on the hepatotoxicity in CCl4-treated rats were studied.
The antioxidative effects of Panax ginseng saponin(PGS) and puerariae radix saponin(PRS) were investigated at the levels of liver tissue total homogenates, mitochondrial and microsomal fractions of SD-rats intoxicated with carbon tetrachloride(CCl4).
Lipidperoxides of each fraction in ANO group were highly increased compared to NO group. Extracts of Panax Ginseng and Puerariae Radix treated group markedly inhibited lipidperoxidation by 47 % ~ 75 %.
And as the result of the measurement of SOD (superoxide dismutase), catalase, total glutathione (GSH +GSSG) and glutathione peroxidase (GPx) activities in the liver tissue total homogenates, mitochondrial and microsomal fractions were highly decreased in ANO group compared to NO group.
But they were increased significantly in the PGS, PRS groups compared to ANO group.
Especially, catalase, total glutathion and GPx activities in microsomal fractions of ANO group were highly showed.
And also, SOD activity in mitochondrial fraction of ANO group actively decreased compared to in microsomal fraction and liver tissue total homogenetes of ANO group.
In view of this study PGS, PRS were effective on the detoxication of liver injury.

[PA4-14] [10/18/2001 (Thr) 14:00 - 17:00 / Hall D]

Anti-tumor Agent, Paclitaxel, Induces *de novo* Synthesis of Ceramide, Which May Lead to Apoptosis in Human Breast Cancer MCF-7 Cells

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The anti-neoplastic agent paclitaxel (Taxol), a microtubule stabilizing agent, is known to arrest cells at the G2/M of the cell cycle and apoptosis. Although much is known about cytotoxic mechanisms, the effect of paclitaxel cannot be solely explained by microtubular interation. Several reports recently demonstrated that ceramide, a second messenger in apoptotic signaling, plays a key role in the nature of cellular response to anti-cancer therapies, participating in reactions to both chemotheraphy and radiation. This study was undertaken to determine whether ceramide production is involved in paclitaxel-induced apoptosis in human breast cancer cells. Exposure of cells to paclitaxel resulted in the enhanced production of ceramide, which is reduced by two inhibitors of sphingolipid biosynthesis, fumonisin B1, a ceramide synthase inhibitor, and L-cycloserine, a serine palmitoyltransferase inhibitor. An inhibitor of glucosylceramide synthesis, 1-phenyl-2-dacanoylamino-3-morpholino-1-propanol, induced ceramide production. Importantly, L-cycloserine significantly attenuated paclitaxel-induced cell death in MCF-7 cells. These results suggest that paclitaxel-induced apoptosis is, in part, attributable to ceramide and