

potential anticancer activities.

[PA4-26] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]

Antioxidative Effect of *Houttuynia cordata* Thunb in TCDD-Damaged Rats

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Houttuynia cordata Thunb (HCT) is a herbal plant growing in China, Japan and Korea. According to the records of the Chinese medicine, this plant has been used as folk medicine for analgesics, beriberi, edema, hepatitis, icterus, etc. TCDD (2,3,7,8-tetrachlorodibenzo-p-dioxin), one of the notorious toxic environmental pollutants, damages various organs including liver and is regarded as an endocrine disrupter. After 7 days from TCDD (1 $\mu\text{g}/\text{kg}$) injection, HCT (200 mg/kg) was administered into rats intraperitoneally for 4 weeks. In this study, the effect of antioxidative enzymatic activity on HCT was investigated. This antioxidative effects of HCT on TCDD-damaged rats were measured through that the activity of Aspartate aminotransferase (AST), Alanine aminotransferase (ALT) in serum and Superoxide dismutase (SOD), Catalase (CAT), Glutathione reduced form (GSH), Glutathione oxidized form (GSSG), Glutathione peroxidase (GPx) in liver tissue. HCT administered and TCDD-damaged (HTD) group showed inhibitory effect in AST and ALT activity compared to TCDD-damaged abnormal (TDA) group. GSH, GSSG and GPx of HTD group were significantly higher than those of TDA group. SOD and CAT in HTD administered group were increased compared to those of TDA group.

[PA4-27] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]

Up-regulation of inducible nitric oxide synthase expression and inflammatory cytokines by collagen and gelatin in murine macrophages

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Synthetic polymers, biological polymer such as collagen and gelatin are employed extensively as backbones in the construction of hydrogels or cell/tissue scaffoldings for various biomedical applications. In the present study, we investigated the effect of collagen and gelatin on the inducible nitric oxide synthase (iNOS) gene expression in the mouse macrophage cell line RAW 264.7. The production of nitric oxide and expression level of iNOS mRNA were induced by both of collagen and gelatin in dose-dependent manner. The production of TNF- α , IL-1 β and IL-6 and their mRNA levels of cytokines were also increased in dose-dependent manner similarly with nitric oxide and expression level of iNOS mRNA. The effects of collagen and gelatin on the transcriptional activity of NF-kB were examined, since the transcriptional regulation of iNOS has been shown to be under the control of the NF-kB. Transient expression assay with the luciferase reporter vector containing three-copies of NF-kB binding site revealed that the increased level of iNOS mRNA induced by collagen or gelatin could be mediated by the NF-kB transcription factor complex. Furthermore, collagen and gelatin activates the DNA binding ability of NF-kB, in the result of electrophoretic mobility shift analyses using the NF-kB binding sequence within iNOS promoter as a probe. These results demonstrated that nitric oxide, TNF- α , IL-1 β and IL-6 production in the collagen- and gelatin-stimulated macrophages might be induced by the up-regulation of these genes expression through NF-kB transactivation.

[PA4-28] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]

A Fatal Case Involving Venlafaxine Intoxication

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This report describes the fatal case of a 13-year-old middle school girl(MSG) whose cause of death might be attributed to a intoxication involving Venlafaxine(VEN). MSG's mother had the history of depression for 11 years. She and her daughter were found dead in the same room of their apartment, with hanged herself. We analyzed the postmortem of MSG which were requested to our institute for the cause of her death. We couldn't get any blood samples from MSG's postmortem. So, we could detect unchanged VEN in the liver, spleen, brain and gastric contents using capillary gas chromatography with a nitrogen-phosphorus detector and gas chromatography-mass spectrometry(GC-MS). The following VEN concentrations were determined in MSG's postmortem tissues : 37.8 μ g/kg(liver), 39.9 μ g/kg(spleen) and 19.6 μ g/kg(brain) ; other antidepressants, alcohol, and benzodiazepines couldn't be detected in specimens. The cause of her death was determined to be the intoxication of VEN resulting from its overdosage. The manner of death was postulated to be the homicide by her mother.

[PA4-29] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]

The Flavonoid Morin Inhibits Dimethylnitrosamine-Induced Liver Damage in Rats

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Morin, one of the major natural flavonoids has been reported to exhibit a wide range of pharmacological properties. In this study, we investigated the hepatoprotective effect of morin on the dimethylnitrosamine (DMN)-induced liver damage in rats. Oral administration of morin (10, 20mg/kg daily for 4 weeks) into the DMN-treated rats remarkably prevented the elevation of serum alanine transaminase, aspartate transaminase and alkaline phosphatase, and bilirubin levels. Morin also increased serum protein level and reduced the hepatic level of malondialdehyde in DMN-treated rats. Furthermore, DMN-induced elevation of hydroxyproline content was reduced by the treatment of morin and which result was consistent with a histochemical analysis of liver tissue stained with Sirius red. In conclusion, these results demonstrate that the *in vivo* hepatoprotective effect of morin against DMN-induced liver injury, and suggest that morin may be useful in the prevention of liver damage.

[PA4-30] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]

Induction of cyclooxygenase-2 by collagen and gelatin in murine macrophages

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Gelatin protein is derived from animal collagen tissues and is therefore present in many kinds of animal protein food. The biological origin and biocompatibility of gelatin has led to wide-ranging applications in the pharmaceutical and medical fields; for example, as sealants for vascular prostheses, bone-repairing materials, wound healing agents and scaffolds for tissue engineering purposes. In the present study, we investigated the effects of collagen and gelatin on the cyclooxygenase-2 (COX-2) gene which plays a crucial role in many physiological and pathological processes in macrophages. Collagen and gelatin significantly increased the production of prostaglandin E₂ (PGE₂) and the expression of COX-2 mRNA in dose-dependent manner. To investigate the significant cis-acting regions which COX-2 promoter, transient transfection experiments were carried out using reporter vectors harboring deleted COX-2 promoters. The transcriptional factor binding sites for activator protein 1 (AP-1) and NF-kB between -574 and -51 could be important for the induction of COX-2 mRNA by collagen and gelatin. The results of these studies suggest that induction of transcriptional activation of COX-2 by collagen and gelatin might be mediated through the AP-1 and NF-kB activation.

[PB1-1] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]