

Effects of Mancozeb on splenocyte proliferation and nitric oxide formation in vitro.

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Mancozeb, a polymeric complex of zinc and manganese salts of ethylene bisdithiocarbamate (EBDC), is used widely in agriculture as fungicides, insecticides, and herbicides. Mancozeb has been reported to induce teratogenic and carcinogenic effect. But the immunomodulating effects of Mancozeb exposure have not been systematically evaluated. To initiate investigation of effects on splenocyte proliferation and nitric oxide formation in vitro, we conducted mitogen-induced proliferation of splenocytes and nitric oxide production of peritoneal macrophages from mice in vitro. When peritoneal macrophages from normal mice were activated with LPS and IFN- γ in the presence various concentration of Mancozeb, Mancozeb suppressed nitric oxide production as dose-dependent manner. Also splenocytes proliferation to mitogen (Con A, LPS) was suppressed by Mancozeb with as dose-dependent manner.

[PA3-5] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Effects of Mancozeb on the immunopathological parameters and plaque forming cells after acute exposure to mice.

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Mancozeb, a polymeric complex of zinc and manganese salts of ethylene bisdithiocarbamate (EBDC), is used widely in agriculture as fungicides, insecticides, and herbicides. The toxicological significance of the EBDC residues in food stems from the metabolite or degradation product ethylenethiourea, known to be carcinogenic and teratogenic in laboratory animals. The purpose of this study was to investigate the effects of Mancozeb on immunopathological parameters and plaque forming cell after acute exposure to mice. single oral administration of Mancozeb (2500, 5000, 10000mg/kg b.w.) to female ICR mice, weights of body and lymphoid organs, hematological parameters and the splenic IgM plaque forming cells (PFC) to SRBC were assayed. Body-, spleen- and thymus-weight were not significantly changed, liver weight was increased, and WBC was decreased by Mancozeb exposure. IgM PFC in splenocytes were slightly decreased, when Mancozeb was administered after SRBC-immunization.

[PA3-6] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Effects of Green Tea Catechins and (-)-Epigallocatechin Gallate on Rabbit Platelet Aggregation and Thromboxane B₂ Formation

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Green tea constituents, especially green tea catechins (GTC), exhibit a range of pharmacologic effects including anticarcinogenic activity and prevention of cardiovascular diseases. In this study, the effects of green tea catechins (GTC) and (-)-epigallocatechin gallate (EGCg), a major compound of GTC, on rabbit platelet aggregation and thromboxane B₂ (TXB₂) formation were investigated. GTC and EGCg significantly inhibited PAF-induced rabbit platelet aggregation. The IC₅₀ values for GTC and EGCg were 1.02 mg/ml and 1.20 mg/ml, respectively. In the PAF-receptor binding assay, neither GTC nor EGCg showed any inhibitory effects on the specific bindings of PAF to its receptor. GTC and EGCg also inhibited collagen-induced TXB₂ formation in human washed platelet.

These results indicate that GTC and EGCg inhibit the platelet aggregation by interfering with the intracellular messenger system, but not by inhibiting the binding of PAF to PAF-receptor on the platelet membrane directly, and suppression of TXB₂ formation by GTC and EGCg may be responsible for inhibitory activities on the platelet aggregation and further on the thrombosis.

[PA3-7] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Action mechanisms of antiestrogenic potentials of Ginkgo biloba extract in human breast cancer cell

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Ginkgo biloba extract (GBE) contain a complex mixture of approximately 300 chemicals. The active ingredients of what is commonly called Ginkgo are extracted from the dried, two-lobed hence, biloba fan-shaped leaves of the Ginkgo biloba tree, which grows in temperate climate. The standard GBE contain in 24% flavonoid glycosides (Ginkgo-flavone glycosides) and 6% terpene lactones (ginkgolides, bilobalide). Therefore, GBE containing 24% flavonoids may reduce the risk of breast cancer, in addition to may reduce the risk of osteoporosis by therapeutic agent of breast cancer. However, little is known about the estrogenic activity of GBE.

In order to evaluate action of GBE as chemopreventive agents in breast cancer, we measured the estrogen antagonistic effect of GBE by using the ER-positive (MCF-7 and T47D) and ER-negative (MDA-MB-231) cell lines. The action mechanisms of GBE on chemopreventive effect were estimated the cross-talk activity by arylhydrocarbon receptor and estrogen receptor through T47D and B(a)P-resistant T47D cells. These results showed that GBE induced weak agonistic and strong antagonistic activity. Weak estrogen effect of GBE was mediated through estrogen receptor. However, its antagonistic activity was not mediated through estrogen receptor. Also, it showed the cross-talk activity mediated estrogen receptor and arylhydrocarbon receptor.

[PA3-8] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Effects of Fractions of *Dendropanax moribifera* Lev. on Alcohol-induced Hepatotoxicity in Rats

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Alcohol is the major cause of the liver disease in Korea. Liver disease induced by alcohol is classified as fatty liver, hepatitis and cirrhosis.

Dendropanax moribifera Lev.(Araliaceae) is one of evergreen trees grown on the Che-ju island and near the seashores of the southern area of Korean peninsula. Traditionally, it is known as a useful natural product to treat hang-over relief, eye disease and jaundice.

So we studied the protective effects of various fractions from the methanol extract of *Dendropanax moribifera* Lev. on the alcohol-induced hepatotoxicity in rats.

Simultaneously administered in Sprague-Dawley rats with alcohol orally, butanol, hexane and chloroform soluble fraction from the methanol extracts were found to inhibit the increase of the serum transaminase activities and alkaline phosphatase activity. Particularly, the serum transaminase activity level was decreased to the normal state in hexane soluble fraction treated rats.

Water and chloroform soluble fraction suppress the generation of malondialdehyde, an index of endogenous lipid peroxidation in liver tissue by 50%.

Comparing with pre-treatment, co-treatment is proved to be more effect.

Therefore, methanol extract of *Dendropanax moribifera* Lev. and its fractions are inferred to be possibly applied to functional beverage, functional food and medicine for liver protection.