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In our continuous studies on antimutagenic, anti-lipid peroxidative and anti-rheumatoidal activities of the stem bark of Kalopanax pictus, it was hypothesized that this crude drug may have anti-carcinogenic activity. In addition, it has been also reported that an active constituent, kalopanaxsaponin A (KPS-A), has the possibility for an anti-cancer chemopreventive. In this experiment, the KPS-A -pretreated (i.p., 7 day) effects on hepatic drug-metabolizing enzymes were investigated in bromobenzene-induced rats. The only treatment with bromobenzene increased hepatic aminopyrine N-demethylase belonged to cytochrome P450 enzymes but considerably inhibited epoxide hydrolase indicating the effects associated with carcinogen. Seven-day pretreatment with KPS-A (10-30 mg/kg) significantly inhibited this carcinogenic effect of bromobenzne. Based on this observation, it was suggested that most biological activities of KPS-A such as antimutagenic, anti-lipid peroxidative and anti-carcinogenic might share the same progresses on hepatic cells.

[PD2-41] [04/20/2001 (Fri) 13:30 - 14:30 / Hall 4]

Toxicological Aspects of Eugenol Isolated from the Essential Oil of Eugenia caryophyllata

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The essential oil (EC-oil) was obtained from the buds of Eugenia caryophyllata to examine the free radical-scavenging activity, cytotoxicity and the in vivo toxicity. The major component, eugenol, was isolated from EC-oil using silica gel column chromatography. Eugenol was chemically transformed to methyleugenol in order to elucidate structure-activity relationship. GC-MS analysis of EC-oil led to the identification of a major volatile component, eugenol, and a minor one, isoeugenol, and to no finding of other noticeable peaks. The cytotoxicity of eugenol and EC-oil was greatly attenuated by sulfhydryl-contaning N-acetylcysteine (NAC), suggesting that exomethylene of allyl group is susceptible to the nucleophilic sulfhydryl. However, eugenol showed potent free radical-scavenging activity where this activity is a direct antioxidant activity, not anti-lipid peroxidation activity. In normal rats, treatment of EC-oil and eugenol considerably increased malodialdehyde (MDA) but decreased glutathione content and glutathione S-transferase (GST), respectively, suggesting that they are the substances causing lipid peroxidation and glutathione conjugation. Overall properties of EC-oil and eugenol on the hepatic drug-metabolizing system resembled those of xenobiotics. The structure of eugenol well represented the toxicological aspects.

[PD2-42] [04/20/2001 (Fri) 13:30 - 14:30 / Hall 4]

Toxicological Aspects of Eugenol Isolated from the Essential Oil of Eugenia caryophyllata

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[PD2-43] [04/20/2001 (Fri) 13:30 - 14:30 / Hall 4]

Antihyperlipidemic effect of Gamigwaruhaebaekhwanggum-Tang

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This study was carried out to evaluate the antihyperlipidemic effect of Gamigwaruhaebaek - hwanggum-Tang(GGHHT) on HMG-CoA reductase, DPPH oxidation and lipid superoxidation *in vitro*, Triton WR-1339 and corn oil induced hyperlipidemic rats *in vivo*. Among acivity-guided fractionations of 80% EtOH extract of GGHHT which was responsible for the inhibition of HMG-CoA reductase, lipid superoxidation and DPPH oxidation, BuOH fractionation and fraction composition exhibited remarkable inhibitory effect. 80% EtOH extract and fraction composition of GGHHT showed significant suppression of serum and liver TC and TG levels in Triton WR-1339 induced hyperlipidemic rats. And on 30% corn oil induced hyperlipidemic rats, BuOH fraction of 80% EtOH extract and fraction composition significant suppression of serum and liver TC and TG levels. These results suggest that fraction composition of GGHHT retains a potential antilipidemic activities.

[PD2-44] [04/20/2001 (Fri) 13:30 - 14:30 / Hall 4]

Vascular permeability inhibitory constituents of Kalopanax pictus bark

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We have reported that the ethyl acetate fraction of *Kalopanx pictus* MeOH extract showed potent anti-inflammatory activity. In this study, the ethyl acetate fraction was chromatographed by silica gel column in chloroform solvent system. The chromatographic separation was monitored by vascular permeability test in mice. The subfraction 8 of ethyl acetate fraction showed the most potent activity. This subfraction was rechromatographed and five fractions of 8-1 ~ 5 could be obtained. Among these subfractions, fraction 8-2 was identified to be most potent and its chemical structure was elucidated to be kalopanaxsaponin A.