then its fractions was measured radical scavenging activity and anti-lipid peroxidative efficacy on human low density lipoprotein(LDL) with DPPH method and TBARS assay.
The results showed that ethylacetate, butanol fraction of the methanol extracts had anti-oxidative activity and precipitate of butanol (ppt II) were potent particularly.

[PD2-38] [04/20/2001 (Fri) 13:30 - 14:30 / Hall 4]

Inhibition of Nitric Oxide Synthesis in LPS-activated Macrophages by Korean Woody Plants

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Nitric oxide (NO) produced in large amounts by inducible nitric oxide synthase (iNOS) is known to be responsible for the vasodilation and hypotension observed in septic shock and inflammation. Inhibitors of iNOS, thus, may be useful candidate for the treatment of inflammatory diseases accompanied by the overproduction of NO. We prepared alcoholic extracts of woody plants and screened the inhibitory activity of NO production in lipopolysaccharide (LPS)-activated macrophages after the treatment of these extracts. Among 83 kinds of plant extracts, 23 kinds of extracts showed potent inhibitory activity of NO production above 60% at the concentration of 80 μg/ml. Some of potent extracts showed dose dependent inhibition of NO production of LPS-activated macrophages at the concentration of 80, 40, 20 μg/ml. Especially, *Artemisia iwayomogi, Populus davidiana* and *Populus maximowiczii* showed the most potent inhibition above 70% at the concentration of 40 μg/ml. Inhibitory activity of NO production was concentrated to nonpolar solvent fractions (ethyl ether and/or ethyl acetate soluble fractions) of *Artemisia iwayomogi, Machilus thunbergii* and *Morus bombycis*. These plants are promising candidates for the study of the activity-guided purification of active compounds and would be useful for the treatment of inflammatory diseases and endotoxemia accompanying overproduction of NO.

[PD2-39] [04/20/2001 (Fri) 13:30 - 14:30 / Hall 4]

Free Radical Scavenging Constituents of the Roots of Polygonum multiflorum

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In the course of screening for free radical scavenger from Korean medicinal plants, the ethanol extract of *P. multiflorum* showed the promising activity on DPPH test. Activity-guided fractionation of an ethanol extract of this plant furnished two free radical scavengers, *E*-2,3,5,4'-tetrahydroxystilbene 2-*O*-β-D-glucopyranoside (1) and catechin (2) together with an inactive β-sitosterol. Compounds 1 and 2 showed the IC_{50} values with 22.2 and 10.3 μM, respectively. L-Ascorbic acid as a positive control exhibited an IC_{50} value with 480 μM.

[PD2-40] [04/20/2001 (Fri) 13:30 - 14:30 / Hall 4]

Anticarcinogenic Properties of Kalopanaxsaponin A Isolated from the Stem Bark of Kalopanax pictus

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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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