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In patients with rheumatoidal arthritis, it is well known that the aging associated with oxidative stress is accompanied. In the rheumatoidal rat induced by Freund's complete adjuvant (FCA) reagent, we investigated hepatic lipid peroxide contents and hepatic drug-metabolyzing system to demonstrate the inhibitory effect of hederagenin monodesmosides of Kalopanax pictus on oxidative stress. Kalopanaxsaponin (KPS) A significantly decreased malondialdehyde formation, and the activities of xanthine oxidase and aldehyde oxidase of hepatic non-microsomal systems in FCA reagent-treated rats. Increased activity levels of superoxide dismutase, catalase and glutathione peroxidase were also found. The effects of KPS-A were more potent than those of KPS-I. Because we have demonstrated the anti-inflammatory effects of KPS-A and -I in the present experimental model, it was suggested that K. pictus could reduce rheumatoidal syndromes as the most important mechanism in the unique way of anti-inflammatory herbal medicines.

[PD2-44] [10/20/2000 (Fri) 11:30 - 12:30 / [Hall B]]

Analgesic Effect of Kalopanax pictus extract and Its Saponin Components, and Their Inhibitory Effect on Freund's Complete Adjuvant Reagent-Induced Rheumatoidal Arthritis in Animal

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To elucidate active components for rheumatoidal arthritis, the methanolic extract of Kalopanax pictus was fractionated to CHCl3, ethylacetate (EtOAc) and n-butanol (BuOH) fraction. Further, the column chromatographic isolation of EtOAc fraction gave kalopanaxsaponin A and I (KPS-A and -I, hederagenin monodesmosides), and that on BuOH fraction gave kalopanaxsaponin B, -H and -J (KPS-B, -H and -J, hederagenin bisdesmosides), respectively. MeOH extract, EtOAc fraction (250, 500 mg/kg, p.o.) and KPS-A and -I (5, 10, 20 mg/kg, i.p.) exhibited significant analgesic effects on acetic acid-writhing method and hot plate method. On Freund's complete adjuvant reagent-induced rheumatoidal arthritis in rats, the administration of EtOAc fraction and KPS-A and -I inhibited edema, agglutination, vascular permeability and trypsin inhibitor. In addition, LD50 of the MeOH extract was shown to be 4,033 mg/kg. In conclusion, anti-rheumatoidal effects of KPS-A and -I were suggested to be attributed to the inhibition of kinin formation by suppression of trypsin inhibitor activity. Further, it was suggested that K. pictus extract could be suitable for the treatment of rheumatoidal arthritis, because the extract belonged to slightly toxic class.

[PD2-45] [10/20/2000 (Fri) 11:30 - 12:30 / [Hall B]]

Studies on the Development of Antihyperlipidemic Drugs from Oriental Herbal Medicines(III) -Antihyperlipidemic Effects of Herbal Prescriptions-

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In the previous study, we have found that several herbal medicines including Trichosanthes Fructus, Pinelliae Tuber, Aurantii Immatrus Fructus, Magnoliae Cortex, Allii Macrostemi Bulbus,