

College of Pharmacy, Kyungsoong Univ., \*Department of Food and Nutr., Dong-A Univ., \*\*College of Pharmacy, Kyung-Hee Univ. \*\*\*Natural Products Research Institute, Seoul Nat. Univ., \*\*\*\*Division of Applied Plant Sciences, Sangji Univ.

In patients with rheumatoid arthritis, it is well known that the aging associated with oxidative stress is accompanied. In the rheumatoid rat induced by Freund's complete adjuvant (FCA) reagent, we investigated hepatic lipid peroxide contents and hepatic drug-metabolizing 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 rheumatoid 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 Rheumatoid Arthritis in Animal**

Choi JW, Chun HW, Kim SH\*, Park HJ<sup>0</sup>\*\* and Han YN\*\*\*

College of Pharmacy, Kyungsoong University, \*Department of Food and Nutrition, \*\*Division of Applied Plant Sciences, Sangji University, \*\*\*Natural Products Research Institute, Seoul National University

To elucidate active components for rheumatoid arthritis, the methanolic extract of *Kalopanax pictus* was fractionated to CHCl<sub>3</sub>, 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 rheumatoid arthritis in rats, the administration of EtOAc fraction and KPS-A and -I inhibited edema, agglutination, vascular permeability and trypsin inhibitor. In addition, LD<sub>50</sub> of the MeOH extract was shown to be 4,033 mg/kg. In conclusion, anti-rheumatoid 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 rheumatoid 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-**

Jung EA<sup>0</sup>, Kim YK<sup>1</sup>, Kim NJ\*, Kim DH<sup>2</sup> and Lee SI<sup>1</sup>

East-West Medical Research Institute, <sup>1</sup>College of Oriental Medicine and <sup>2</sup>College of Pharmacy, Kyung-Hee University, Seoul 130-702, Korea

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

Cinnamomi Ramulus, Scutellariae Radix, exhibited antihyperlipidemic effects. Therefore, some herbal prescriptions which is formulated above those herbal medicines have been evaluated for antihyperlipidemic effects on HMG-CoA reductase and DPPH free radical scavenging effect in vitro, and on experimental hyperlipidemic rats and mice induced by Triton WR 1339 and hypercholesterol diet respectively in vivo. Among them, Gamigwarluhaebaekwhanggum-Tang formulated on the bases of Gwarluhaebaekbaekju-Tang, Gwarluhaebaekbanha-Tang listed in the traditional medicinal references showed more significant antilipidemic effects than the other prescriptions.

[PD2-46] [ 10/20/2000 (Fri) 11:30 - 12:30 / [Hall B] ]

#### **Effect of the stem extracts from *Acanthopanax senticosus* on hyperlipidemia in rats**

Lee YS<sup>o</sup>, Shim JY, Chung SH, Lim SS, Choi YJ, Shin KH

Natural Products Research Institute, Seoul National University

The effects of the water extracts from *Acanthopanax senticosus* self grown in Baik-Du mountain area on lipid metabolism were evaluated in hyperlipidemic rats induced by lipid rich diet and poloxamer 407. *A. senticosus* extract, when administered orally for 3 consecutive days in hyperlipidemic rats induced by poloxamer 407 ( 1 ml of 30% ) was found to cause a significant decrease in plasma cholesterol and triglyceride concentrations. The water extracts, when treated orally for 5 consecutive days also showed a significant inhibition of serum total cholesterol and triglyceride in rats treated with lipid rich diet (15% cholesterol). HDL-cholesterol, however, was increased significantly. These results suggested that the mode of hypolipidemic activities caused by *A. senticosus* might be in part due to the inhibition of HMG-CoA reductase and/or induction of lipoproteinlipase activities.

[PD2-47] [ 10/20/2000 (Fri) 11:30 - 12:30 / [Hall B] ]

#### **Biological activities of the herb of *Chrysanthemum zawadskii***

Kim YY, Lee SY, Yim DS

Department of pharmacy, Sahmyook University, 139-742

The herb of *Chrysanthemum zawadskii*(Compositae), which is called Gu-Jul-Cho, has been used in traditional medicine for pneumonia, bronchitis, cough, common cold, pharyngitis, bladder-related disorders, women's diseases, gastroenteric disorders, and hypertension, etc. In this study various biological activities including acute toxic, antipyretic, antiinflammatory, analgesic, and antihepatotoxic properties, were screened in both mouse and rat using linarin, main compound of *Chrysanthemum zawadskii*, and its MeOH extract. In this study, the lethal dose of linarin was over 2,000 mg/kg. Linarin and its MeOH extract exerted antifebrile activity and antiinflammatory effect similar to Aspirin in antipyretic test using Brewers yeast and antiinflammatory test using arachidonic acid and *o*-tetradecanoylphorbol 13-acetate, respectively, and they showed superior to Silymarin in antihepatotoxic test using CCl<sub>4</sub>.

[PD2-48] [ 10/20/2000 (Fri) 11:30 - 12:30 / [Hall B] ]

#### **Effects of *Angelica keiskei* on the Hepatic Bromobenzene-Metabolizing Enzyme System in Rats and Its Bioactive Component, Cynaroside**