

## induced diabetic and KKAY mice.

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Hypoglycemic and renal protection effects of Sigiwhan(SGW) was evaluated in STZ-induced diabetic mice and KKAY mice.

SGW was prepared as a powder mixture of seven crude drugs : Remanniae Radix Preparata, Dioscoreae Rhizoma, Corni Fructus, Schizandrae Fructus, Moutan Cortex Radicis, Hoelen, Alismatis Rhizoma. In KKAY mice, the animals were divided into four groups : group administered with distilled water, SGW(0.7 g/kg), SGW(3.5 g/kg) and Rosiglitazone(0.33 mg/kg), designated by C, S1, S2 and R, at 2:00 P.M with a zonda, respectively. In the STZ-induced mice, the hypoglycemic effects of each drug evaluated.

In the KKAY mice, serum glucose level, insulin and HbA1c were measured. Quantitations of Muscular GLUT-4, hepatic PEPCK and fat PPAR- $\gamma$  mRNA levels were performed by northern blot, and quantitation of GLUT-4, PPAR- $\gamma$ , HSP72 and GRP94 protein level were performed by western blot. In the STZ-induced mice, serum creatinine and BUN concentration were measured.

In the STZ-induced mice, blood glucose levels was decreased in Remanniae Radix Preparata, Moutan Cortex Radicis, Hoelen, Alismatis Rhizoma.

We may suggest that SGW showed significant antidiabetic activities and due to reducing insulin resistance through affecting gene expressions of hepatic PEPCK, muscular GLUT-4, fat PPAR- $\gamma$  and improving renal functions.

[PA1-22] [ 10/19/2000 (Thr) 10:00 - 11:00 / [Hall B] ]

### Antiinflammatory activity of Polygala Radix extracts

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Polygalae radix (PA) is traditionally used as a stimulant of CNS activities and expectorant for Korean. It contains triterpenoidal saponins, xanthones, polygalitol and N-acetyl-D-glucosamine etc. In the present study, I explored to determine if methanol extract of PA possesses analgesic and anti-inflammatory activities and also characterized mechanisms of antiinflammatory effects. Methanol extract of PA had significant anagesic and antiinflammatory actions as evidenced by the rat paw edema test and acetic acid writhing assay. The PA extract inhibited bradykinin-induced rat ileum contraction. It also inhibited PGF2 alpha production induced by LPS in mouse macrophages. These results suggest that anti-inflammatory and anlgestic activities of PA extract are partially mediated by the inhibition of bradkinin actions and PGF2 alpha production.

[PA1-23] [ 10/19/2000 (Thr) 10:00 - 11:00 / [Hall B] ]

### Protective Effect of an Aged Garlic-bamboo salt Mixture on the Rat with the Alcohol-salicylate Induced Gastritis

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Garlic has been known to be effective against the gastrointestinal diseases where the oxygen-derived free radicals(OFRs) implicate the pathophysiology. This is due to the presence of sulfur-containing organic compounds in garlic, which are known to scavenge OFRs. Many reports stated that bamboo salt was effective on the treatment and prevention of various gastrointestinal

diseases such as peptic ulcer and oral diseases such as periodontitis. Bamboo salt is a processed salt invented by a Korean guru in oriental medicine, IL-Hoon Kim, who modified the Korean traditional bamboo salt recipe extensively. At present, it is widely accepted that garlic and bamboo-salt are useful for the treatment of gastric hyperacidity, gastritis, peptic ulcer and gastric cancer as an alternative medicine in Korea. To understand the protective mechanism of the garlic-bamboo salt mixture, the gastritis was induced in rats with alcohol-salicylate and the inhibitory effect of type conversion on xanthine oxidase(XO) and the activities of the free radical scavenging enzymes including glutathione peroxidase(GPx), glutathione reductase(GR) and superoxide dismutase(SOD), with the changes of total glutathione(GSH) contents were examined. In this study, we found that the garlic-bamboo salt mixture reduce the severity of hemorrhagic lesion in gastric mucosa in the rats. In addition, the increment of type conversion from xanthine dehydrogenase(XD) to xanthine oxidase(XO) and the change of the XO activity in gastric tissue was significantly reduced and the activities of GPx, GR, SOD were significantly increased and the total content of GSH was recovered. From these results, we concluded that the protective effect of the garlic-bamboo salt mixture is its ability to decrease XO type conversion and to increase the activities of the free radical scavenging enzymes(GPx, GR, SOD) and to recover the level of GSH in the rats with the alcohol-salicylate induced gastritis.

[PA1-24] [ 10/19/2000 (Thr) 10:00 - 11:00 / [Hall B] ]

### Characterization of anti-angiogenic Activity from *Holotrichia diompharia*

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*Holotrichia diompharia* (Melolonthidae) has been used as a folk medicine due to its wide action. It was previously found that the ethanolic extract of *H. diompharia*(EEH) showed anti-angiogenic activity in chorioallantoic membrane(CAM) assay. In order to obtain the most active fraction, EEH was extracted in turn with n-hexane, ethyl acetate, and butanol and each fraction was evaluated on the capacity to inhibit angiogenesis *in vivo* and *in vitro*. The results revealed that BuOH and aqueous fractions had significant anti-angiogenic activity in chick embryo CAM assay. Also, these fractions inhibited basic fibroblast growth factor(bFGF)-induced proliferation of calf pulmonary artery endothelial(CPAE) cells, which is the stage of the early angiogenesis. Thus, their anti-angiogenic activity was estimated to be due to inhibition of the proliferation of vascular endothelial cell.

[PA1-25] [ 10/19/2000 (Thr) 10:00 - 11:00 / [Hall B] ]

### Anti-inflammatory Effects of *Kalopanax pictus* Bark and Its Fractions

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The bark of *Kalopanax pictus* Nakai (Araliaceae) has been using for anti-inflammation in folklore of Korea. It is observed that the 70% methanol extract of the plant bark showed inhibition of vascular permeability in mice (1-3 g/kg, p.o.), of leucocyte emigration in CMC-pouch (0.15-0.3 g/rat, s.c.) and anti-writhing action (3 g/kg, p.o.) in mice, but did not show depression of the edema induced by carrageenin in rats (0.25-3 g/kg, p.o.). It also did not show analgesic effect in Randall-Selitto method in rats. The methanol extract was then partitioned with n-hexane, CHCl<sub>3</sub>, EtOAc and n-BuOH to give each soluble fraction and finally water soluble fraction. Among the fractions, the inhibitory effect on vascular permeability in mice was shown in EtOAc soluble