

## General Pharmacological Activities of Catus Seed(II)

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This investigation was designed to general pharmacological activities from catus(*Opuntia ficus-indica* var *saboten Makino*) seed by dry powder from Cheju Island. All of the catus seed extract showed the measurable non-contractile on the isolated rat duodenum and not influenced the normal mean BP in anesthetized rat. And we are measured phenobarbital-induced sleeping time, locomoter activity, rotarod test, body tempreture, MES-induced seizure, strychnine-induced seizure and PTZ-induced seizure which were influence CNS did not effected by the treatment of catus seed. Carrageenan-induced paw edema and hot plate test in rats and acetic acid-induced writhing test in mice were used as animal models to search antiinflammatory and analgesic activities. Respectively, the treatment of catus seed showed an inhibitory effect on acetic acid-induced writhing and hot-plate test indicating that it also contained analgesic activity and showed an inhibitory effect on carageenan-induced paw edema.

[PA1-23] [ 04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3] ]

### Effect of Polygalae Radix on Cerebral Ischemic and Reperfused Injury

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The present study was undertaken to determine whether Polygalae Radix administration could improve cerebral metabolism during ischemia and subsequent reperfusion. Brain ischemia induced by bilateral common carotid artery(CCA) occlusion in Mongolian gerbil. After 10min occlusion, brains were recirculated for 30 min. 5 Fractions(Methanol, n-hexane, EtoAC, n-BuOH, H<sub>2</sub>O) of Polygalae Radix were administered orally 2hrs before CCA occlusion respectively. The animals were killed by decapitation and isolated brain was homogenized and centrifuged. ATP content, lactate content and lipid peroxide were measured in brain homogenate. In ischemic control animals, the level of ATP significantly dropped after ischemia and reperfusion. This decrease significantly suppressed by n-BuOH treatment. The content of lactate significantly increased in ischemic control animals. This increase was prevented by all Polygalae Radix fractions except n-Hexane fraction. The Lipid peroxidation, malondialdehyde(MDA), a end product of lipid peroxidation, markedly increased by cerebral ischemia and reperfusion. This increase was inhibited by n-BuOH fraction. These results indicate that n-BuOH fraction has the highest potency in cerebral ischemic injury.

[PA1-24] [ 04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3] ]

### Effects of Samultang on Immune Function during the late stage of Pregnancy in Mice

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The purpose of this research was to investigate effects of Samultang water extract (SMT) on cytokines production from immune cells during the late stage of pregnancy in BALB/c mice. SMT (500 mg/kg) was administered p.o. once a day for 7 days, and then thymocytes and peritoneal macrophages were separated. At the late stage of pregnant mice, the proliferation of thymocytes and the production of gamma-interferon in thymocytes were decreased as compared with normal

group, but the production of interleukin-2 and interleukin-4 was increased. The production of tumor necrosis factor- $\alpha$ , nitric oxide and phagocytic activity in peritoneal macrophage were increased as compared with normal group. At the late stage of pregnant mice administered with SMT, the production of interleukin-2 in thymocytes was decreased as compared with pregnant group, but the proliferation of thymocytes, the production of gamma-interferon and interleukin-4 were increased. The production of tumor necrosis factor- $\alpha$  and nitric oxide in peritoneal macrophages were decreased as compared with pregnant group, but phagocytic activity was increased. These results suggest that SMT has the regulative action of immune function of thymocytes and peritoneal macrophages at the late stage of pregnant mice.

[PA1-25] [ 04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3] ]

### **Hypoglycemic activity of the fruiting bodies of *Paecilomyces japonica*, a new type *Cordyceps* sp.**

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Cordyceps is reputed for its broad biological activities and a tonic for replenishing vital function in Chinese traditional medicines.

As continuing attempts to evaluate pharmacological effects of the fruiting bodies of cultivated fungus of *Paecilomyces japonica*, a new type *Cordyceps* sp., its effects on hyperglycemia induced by streptozotocin(STZ) and by epinephrine in rats and in mice were investigated.

The 70% methanol extract, when administered orally at 100 and 300 mg/kg in STZ-induced hyperglycemic rats, caused a significant decrease in blood glucose level 18 and 2 hr after sample treatment. The methanol extract, when administered p.o. at the same dose levels in epinephrine-induced hyperglycemic mice, also caused a significant decrease in serum glucose levels as well as a significant reversal of the liver glycogen contents suggesting its inhibitory activity of glycogen breakdown in the liver.

Treatment of normoglycaemic mice with the methanol extract of the fungus exhibited a significant glucose tolerance up to 3 hr after oral glucose load(2.0 g/kg).

[PA1-26] [ 04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3] ]

### **Antihyperglycemic activities of Supoongsunghwan and its simplified prescriptions in mice**

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Supoongsunghwan, which is on record in Chinese ancient writings (Entrance to Medical Science), has been known as being improved the functions of gastrointestinal tract and kidney.

Antihyperglycemic activities and mechanisms of Supoongsunghwan (S) and its simplified prescriptions (A:Daehwang B:Jisil, Bangpoong, Dokhwal C:Chajunja, Ukiin, Binlang, Majain, Tosaja,Usil, Sanyak, Sansuyu) were examined in C57BL/6J mice fed with high-fat diet.

The 10-fold dose of each prescription was administered for 5 weeks. Body weight and food intake were measured daily and fasting blood glucose (FBG) weekly for 5 weeks. At fifth week, total cholesterol, HDL, LDL, TG and Insulin in blood were examined.

Quantification of muscular glucose transporter (GLUT-4), the rate limiting enzyme for gluconeogenesis, in liver phosphoenolpyruvate carboxykinase (PEPCK) and Peroxisome Proliferator Activated Receptor- $\gamma$ (PPAR- $\gamma$ ) mRNA were performed by RT-PCR.

FBG was decreased in all prescriptions-treated groups except group B when compared to high-fat diet control group (H). Body weight was increased in all prescriptions when compared to normal group fed with normal diet.