

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

**Studies of resveratrol and related hydroxystilbenes on the production of nitric oxide from macrophage cells**

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Effects of resveratrol on the production of nitric oxide were studied from mouse macrophage cells. Resveratrol significantly inhibited the LPS-induced nitric oxide production in a dose-dependent manner. To study the structure activity relationship resveratrol and 10 related hydroxystilbene compounds,  $\beta$ -estradiol were tested the inhibition of nitric oxide production. Resveratrol and 3,5-dihydroxy-4'-methoxystilbene showed prominent inhibitory activities and their  $IC_{50}$  values were 17 and 25 $\mu$ M, respectively. However,  $\beta$ -estradiol did not produce noticeable effect on nitric oxide production at physiological concentrations, suggesting that estrogen receptor is not involved for the inhibition of nitric oxide production. Resveratrol failed to inhibit the LPS-induced tyrosine phosphorylation of MAPK. At relatively high concentration (100  $\mu$ M), resveratrol inhibited the mobilization of NF- $\kappa$ B.

[PA1-20] [ 10/19/2000 (Thr) 10:00 - 11:00 / [Hall B] ]

**Hypoglycemic activities of Supoongsungihwan and its simplified prescriptions in high fat diet-and Streptozotocin-induced diabetic mice.**

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Supoongsungihwan (SPSGW), which is on record in chinese ancient writings (Entrance to Medical Science), has been known as improvement in the functions of gastrointestinal tract and kidney. In high fat diet-induced diabetic mice, the hypoglycemic activities and mechanisms of SPSGW and its simplified prescriptions (A:Daehwang B:Jisil, Bangpoong, dokwhal C:Chajunja, Ukiin, Binlang, Majain, Tosaja, Useul, Sanyak, Sansuyu) were compared. The 10-fold dose of each prescription was administered once a day for 6 weeks. Body weight and food intake were measured daily and fasting blood glucose (FBS) weekly for 6 weeks. Quantification of glucose transporter (GLUT-4) in muscle and phosphoenolpyruvate carboxykinase (PEPCK) in liver mRNA were performed by RT-PCR. In SPSGW, A and C group, the GLUT-4 gene expression is increased and in SPSGW and A group, the PEPCK gene expression is decreased. FBG and body weight was decreased in all prescriptions-treated groups when compared to high fat diet control group. In STZ-induced diabetic mice, to figure out which constituents in SPSGW represent antidiabetic activity, Chajunja(51%), Jisil(51%), Useul(53%), and Tosaja(56%) showed marked hypoglycemic activity in streptozotocin-induced diabetic mice. We may suggest that SPSGW showed significant antidiabetic activities due to reducing insulin resistance through affecting gene expressions of hepatic PEPCK, muscular GLUT-4 and the active components of SPSGW for antidiabetic activities was Chajunja, Jisil, Useul and Tosaja.

[PA1-21] [ 10/19/2000 (Thr) 10:00 - 11:00 / [Hall B] ]

**The hypoglycemic and Renal Protection effects of Singihwan(SGW) in STZ -**

## 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