

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.**

Lim SS, Shim JY, Lee, YS<sup>o</sup>, Kim, SY, Kim, JY, Shin, KH, Lee, EB

Natural Products Research Institute, Seoul National University

*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**

Bae MR, Song SY, Kim YL, Han KS and Chung SH

Department of pharmacology, Kyunghee University Graduate School of Pharmacy, Seoul 130-701, Korea

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.