

and treated for 8 weeks as follows: control group received powdered standard chow, treated groups were fed with a diet of chow supplemented with KHU-1 either 2 g/kg or 5 g/kg body weight(b.w.), positive control group received rosiglitazone(RSG), 10 μ mol/kg b.w. also administered via the diet. KHU-1 lowered plasma glucose in dose dependent manner from a week after treatment and the hypoglycemic activity was continued for 8 weeks. Triglyceride and free fatty acid were reduced in KHU-1(5 g/kg)-treated group. While the control group had a declining insulin concentration, KHU-1 treatment maintained or increased insulin level at the end of treatment. KHU-1 and RSG-treated rats also exhibited lowered urinary albumin excretion as compared to the control, indicative of renal glomerular damage. In the mechanism study, PPAR γ mRNA and protein expressions in epididymal fat were increased in KHU-1-treated group, which was comparable to RSG-treated group. GLUT4 mRNA expressions in quadriceps muscle was also increased in KHU-1 and RSG-treated group. We have detected the expression of fibronectin, one of the ECM proteins, in kidney by immunohistochemistry. KHU-1 suppressed protein expression of fibronectin in comparison with control. We have also investigated TGF- β mRNA expression in kidney and PEPCK mRNA expression in liver. There were no significant differences between control and treatment group in these parameters. From these result we may conclude that KHU-1 showed the excellent hypoglycemic activity and its mechanism was partially due to overexpression PPAR γ in adipose tissue.

[PA1-50] [10/18/2001 (Thr) 14:00 – 17:00 / Hall D]

Hypoglycemic activity of KHU-3 in Ob/Ob mice

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KHU-3 has been known to be used for middle jiao of xiao-ke based on the traditional Korean ancient writings (dongeuibogam) and composed of three crude herbs. In male Ob/Ob mouse which is characterized by severe obesity, hyperinsulinemia and insulin resistance, features of NIDDM, the hypoglycemic activities and mechanisms of KHU-3 were examined. Mice were grouped and treated for 9 weeks as follows : lean control (C57/BL6J black mice) and Ob/Ob control groups received standard chow , treated groups were fed with a diet of chow supplemented with KHU-3 either 5 % or 10 % of total chow. KHU-3 lowered body weight and plasma glucose in dose dependent manner from a week after treatment and the hypoglycemic activity was continued for 9 weeks. Total cholesterol, triglyceride, free fatty acid and LDL cholesterol were decreased and HDL cholesterol was increased in KHU-3 treated groups at the end of treatment. KHU-3 also lowered HbA1c level by 1 % compared as Ob/Ob control. While the Ob/Ob control group showed sever high insulin and C-peptide concentration, KHU-3 treated groups lowered insulin and C-peptide concentration in dose dependent manner. In the mechanism study, quantification of mRNA and protein expression for glucose transporter (GLUT-4) in muscle and peroxisome proliferator activated receptor γ (PPAR- γ) epididymal fat were performed by RT-PCR and western blot. We have also investigated Insulin contents and secretions of β -cell in pancreas by immunohistochemistry. We may suggest that KHU-3 showed the excellent hypoglycemic activity and antidiabetic activities due to reducing hyperinsulinemia and insulin resistance throught affecting gene and protein expressions of fat PPAR- γ , muscular GLUT-4.

[PA1-51] [10/18/2001 (Thr) 14:00 – 17:00 / Hall D]

Higenamine reduces infarct size and myocardial ischemic injury by modulation of immune cytokines

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Recent studies have shown that cytokines are capable of modulating cardiovascular function and that