

[PA3-15] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Effects of Sungkangwon on the Fatty Liver Induced by Alcohol Diet in Rats

Kwon Hyun Jeong, Kim Yun-Young, Choung Se Young

Dept. of Hygienic Chemistry, College of Pharmacy, Kyung Hee University

The purpose of this study is to investigate the effect of Sungkangwon (*Astragalus membranaceus* Bunge + *Pueraria lobata* Ohwi + *Salvia miltiorrhiza* Bunge) on fatty liver induced by alcohol diet. Rats were either fed control diet or alcohol diet. On 6 weeks, alcohol group were randomly assigned to groups as follows; supplemented without SKW and with SKW (0.33g/kg, 1g/kg, and 3g/kg). All of five groups were fed the chow diet for 4weeks. After 6 weeks, the blood and liver concentration of TG and total-C is comparably high in alcohol group. After 10 weeks, high concentration of TG and total-C is sustained in alcohol group, but SKW group is recovered to the normal level dose dependently. Also, after 6 weeks hepatic lipase concentration increased to reduce TG in liver, after 10 weeks it decreased, it is considered that dissolution of TG in liver is attained actively by SKW. As a result of our study, it is proved that SKW can reduce the level of TG and total-C in blood and liver by increased hepatic lipase activity, and has some effects to remedy on fatty liver induced by alcohol diet.

[PA3-16] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Kaempferol inhibits the platelet-derived growth factor β -receptor tyrosine-phosphorylation and its downstream intracellular signal transduction pathway in rat aortic vascular smooth muscle cells

Kim Soo-Yeon^o, Kim Jin-Ho, Lim Yong, Yoo Hwan-Soo, Yun Yeo-Pyo

College of Pharmacy, Chungbuk National University, Cheongju 361-763, Korea

Kaempferol, a flavonol compound, has been reported as the anti-oxidant and anti-angiogenic agent and it has been found to inhibit cell growth in vitro. Abnormal proliferation of vascular smooth muscle cells (VSMCs) plays an important role in development of atherosclerosis. In this study, we examined the anti-proliferative effect and its mechanism on rat aortic VSMCs treated by kaempferol. kaempferol significantly inhibited the platelet-derived growth factor (PDGF)-BB-induced proliferation of rat aortic VSMCs in a concentration-dependent manner by cell count and [³H]-thymidine incorporation assay. Whereas, Kaempferol did not show any cytotoxicity in rat VSMCs in the experimental condition. In order to elucidate the anti-proliferative mechanism, we examined the effect of kaempferol on the PDGF-BB-induced tyrosine-phosphorylation of PDGF β -receptor. ERK1/2, PI3'K/Akt and PLC- γ 1 were also investigated as downstream target signals of PDGF β -receptor. Pre-treatment of rat aortic VSMCs with kaempferol resulted in a significant inhibition of the PDGF-BB-induced tyrosine-phosphorylation of PDGF β -receptor. In addition to, kaempferol inhibited phosphorylation of ERK1/2, PI3'K/Akt and PLC γ -1 pathway. The expression of c-fos mRNA was also decreased by kaempferol. These observations suggest that kaempferol has the anti-proliferative activity and the effect may be mediated by inhibition of the PDGF-BB-induced PDGF β -receptor tyrosine-phosphorylation and its downstream intracellular signal pathway in rat aortic VSMCs.

[PA3-17] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Antitumor effect of Ginsenoside Rh2 and β -glucan in mice

Lee Chang Hwan, Shim Kyoo Jung, Kim Yun-Young, Choung Se Young

Dept. of Hygienic Chemistry, College of Pharmacy, Kyung Hee University

In the present study, we investigated the antitumor effects of Ginsenoside Rh2 and β -glucan using an experimental metastatic mouse model intravenously injected with B 16 melanoma F10 cells. Oral administration to various concentration of β -glucan (50mg/kg, 100mg/kg and 200mg/kg) dose-dependently reduced the lung-metastatic potential of metastatic B16 melanoma F10 cells in syngenic mice. At same dose, Ginsenoside Rh2(50mg/kg) has more antitumor effect than β -glucan(50mg/kg). Antitumor effect(average tumor weight, average survival rate) of β -glucan 50mg/kg + Ginsenoside Rh2 50mg/kg group is the highest.. Average tumor

weight of Ginsenoside 50mg/kg group and β -glucan 50mg/kg + Ginsenoside Rh2 50mg/kg group was much lighter than that of control group. At average survival rate, β -glucan 50mg/kg + Ginsenoside Rh2 50mg/kg group, β -glucan 200mg/kg, β -glucan 100mg and 50mg/kg, and Ginsenoside 50mg/kg are higher in order. These data suggest that antimetastatic and antitumor effect of combination Ginsenoside Rh2 and β -glucan be the highest.

[PA3-18] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Biological Effects Of Blood And Testis By Abdominal Irradiation With Neutron Or Gamma-ray In Black Mouse

Chun Ki-Jung, Yoo Bo-Kyung

Korea Atomic Energy Research Institute

The aim of this study was to investigate the biological effects of blood and testis by neutron or gamma-ray irradiation in black mouse. Six -week-old C57BL male mice were irradiated with neutron (flux: 1.036739E+09) or Co60 gamma rays(dose rate: 1Gy/min.) The irradiation method of animal was abdominal irradiation and dose of irradiation was 10 and 20 Gy added with 5 and 15Gy in neutron irradiation.. After that, the mice were sacrificed 3 days later. Blood and testis were taken and then composition of blood in blood cell were investigated. In case of testis, testis weight, testis volume and number of sperm in epididymis were investigated. The method and types of irradiation in experimental animal can be many differences in biological effects. This abdominal irradiation can be significantly induced damage of digestive organs, circulatory organs, urinary organs, reproductive organs and so on compared to the other irradiation methods like whole-body and local irradiation. Blood cell ratios in all experimental groups both neutron and gamma-ray irradiation were reduced a little compared to non-irradiated normal group. Especially, number of red blood cells, white blood cells, platelet, Hb and Hct were reduced a little and MCH, MCV and MCHC were similar compared to the non-irradiated control group. Reduction of above results with gamma-ray irradiation were more than those with neutron irradiation. Testis wt. and testis volume in all experimental groups showed almost similar but the number of sperm were reduced a little compared to the normal group. From these results, it showed that blood cells by abdominal irradiation with neutron revealed less damage than those with gamma-ray irradiation but testis wt. and volume revealed no damage with reducing the sperm count in epididymis. Biological effect of blood cells and testis in black mouse by abdominal irradiation with neutron showed less damage than those with gamma-ray compared to the same irradiation dose.

[PA3-19] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Action mechanism of Antiestrogenicity of Ginkgo biloba extracts and its major components in human breast cancer cell

Kim Yun-Hee^o, Ryu Byung-Taek, Oh Seung-Min, Chung Kyu-Hyuck

College of Pharmacy, Sungkyunkwan University

Estrogen is the most important endocrine hormone that has reproduction and physiological process in a number of tissues. However, an excess of estrogen can promotes the growth of hormone-dependent breast cancer. Thus the regulation of estrogen level is important a prevention of estrogen-related cancer. It has been reported that some of flavonoids could inhibit estrogen-dependent cancer. And these compounds are expected as chemopreventive agents on estrogen related disease. Ginkgo biloba extract (GBE) is the active ingredients, which is extracted from the dried, tow-lobed fan-shaped leaves of the Ginkgo biloba tree and contains 24 % flavonoid glycosides and 6% terpene lactones. Therefore, GBE containing a lot of flovonoids may prevent the diseases by estrogen-related cancer. However, no report has been previously demonstrated the preventive effect of GBE on estrogen-dependent diseases. Accordingly, the goal of this study was to investigate the potencies of GBE and its major components (kaempferol, quercetin, and isorhamnetin) for antiestrogenic and antiproliferation effects, which confirms the capacity as preventive agents. It was found that GBE and its major components exerted a dual action on ER-a and ER-b in competitive binding assay. . The binding affinity of these chemicals to ER-b was higher than to ER-a. GBE exhibited biphasic response in estrogenicity. The antiestrogenic action was occurred in the presence of high