

[PA3-9] [ 10/18/2001 (Thr) 14:00 - 17:00 / Hall D ]

### **Cardioprotective effect of *Lidera erythrocarpa* against oxidative stress-induced cell death**

**Kim Mi-Young<sup>o</sup>** , Jung Yi-Sook , Kim Young Ho<sup>1</sup>, Lee Soo Hwan, Baik Eun Joo, Moon Chang-Hyun

Dept. of Physiology, School of Medicine, Ajou Univ, Suwon, #442-749, Korea

Recent evidence has suggested an intimate link between myocardial failure and an excessive generation of reactive oxygen species (ROS), such as O<sub>2</sub><sup>-</sup>,  $\dot{O}H$ , H<sub>2</sub>O<sub>2</sub>. We investigated the effect of several extracts of natural products, *Hovenia dulcis*, *Koelreuteria paniculata*, *Sorbus comixta*, *Pedicularis resupinata*, *Lidera erythrocarpa*, *Sanguisorba officinalis*, *Boehmeria berchemiae*, *Euscaphis japonica*, against ROS-induced cell death. Previously it has been demonstrated that those extracts have anti-oxidant effect as shown by DPPH assay. Cell death was induced by using BSO, buthionine sulfoximine, which inhibit GSH level and subsequently increase ROS level. Cell death was quantitatively determined by measuring lactate dehydrogenase (LDH) activity, propidium iodide (PI)-uptake and morphology. Among those extracts, *Lidera erythrocarpa* has shown the most potent protective effect against BSO-induced cardiac cell death. From 0.3  $\mu$ g/ml to 10  $\mu$ g/ml of *Lidera erythrocarpa* reduced LDH release and PI-uptake by induced BSO, in a dose-dependent manner. We also observed cardioprotective effect of *Lidera erythrocarpa* morphologically by using microscope. In conclusion, our results suggest that *Lidera erythrocarpa* can produce cardioprotective effect against ROS-induced cell death.

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### **Chemopreventive Activities of Ginkgo Biloba Extract on the Estrogenicity In vitro**

Oh SeungMin, Chung KyuHyuck

College of Pharmacy, Sung Kyun Kwan University, Suwonsi, Kyungkido 440-746, Korea

Estrogens are the most effective therapy for women with postmenopausal problems. However, relatively few women use estrogen and then often for a limited time because of the fear of its carcinogenic effects on the uterus and breast. Selective estrogen receptor modulators (SERMs) are agents with antagonist action on the uterus and breast and agonist action on the bones, cardiovascular system, and brain. SERMs have such selective actions may be ideal preventative agents of menopausal women, who are also at increased risk of developing breast cancer. It is believed that phytoestrogens, produced naturally by either plants or their seeds, with agonist and antagonist action of estrogenic activity may reduce the risk of breast cancer, in addition to may reduce the risk of osteoporosis by therapeutic agent of breast cancer. Therefore, phytoestrogens, a part of SERMs may be ideal estrogenic agents for menopausal women. Ginkgo biloba extract (GBE) contains a complex mixture of approximately 300 chemicals which is 24% flavonoid glycosides (Ginkgo-flavone glycosides) and 6% terpene lactones (ginkgolides, bilobalide). The major therapeutic indications of the standard GBE are widely used to treat peripheral or cerebral circulatory disorders and Alzheimers disease. Since GBE contains phytoestrogen, it may act on SERMs. However, little is known about the estrogenic activity of GBE. We examined estrogenic/antiestrogenic potentials and chemopreventive activities of GBE in vitro. GBE induced cell proliferation, pS2, PR mRNA expression in MCF7-BUS and T47D cell lines. And induction of E2 metabolism and reduction of aromatase activity were observed by GBE treatment. Interestingly, pS2, PR mRNA expression induced by E2 were decreased by co-treatment of GBE. We found that GBE could have both agonist and antagonist action of estrogenic activity. These results suggest that GBE has cross-talk activity mediated estrogen receptor and arylhydrocarbon receptor.

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### ***Salvia miltiorrhiza* inhibits hepatocyte apoptosis in cholestatic rat liver**