

Hwang-Chil, a natural resources of Korea, doesn't have a side effects and has excellent bone cell proliferation. We will be able to use Hwang-Chil to cure and develop various disease that require tissue regeneration, such as osteoporosis and bone fracture and be used in the orthopedic area. In this study, we observed the effect of Hwang-Chil extract and concentration on osteoblast proliferation, alkaline phosphatase(ALP) activity and calcification. For the study, after getting methanol extracts of Hwang-Chil, according to polarity degree, we separated and condensed it sequentially into hexane, chloroform, methanol and water fraction in powder form. And it was prepared by Mg-63, osteoblast-like cell line from human osteomatomoid. In order to observe the effect of Hwang-Chil on cell proliferation, we made three concentrations of 0.001mg/ml, 0.01mg/ml, 0.1mg/ml with Hwang-Chil fraction. In the process of cultivating MG-63 cell line, drugs were added, and they were cultivated for 72 hours. Then, cell proliferation was examined by measuring optical density at 540nm. To measure alkaline phosphatase(ALP) activity, cultivated MG-63 cell line was made into cell lysate with drug in media, and substrate was prepared by dissolving 200mM alanine, 2mM  $\alpha$ -keto glutaric acid in 0.1M phosphate buffer, and 2,4-dinitrophenylhydrazine was added, and measured at 540nm. Among Hwang-Chil extracts, hexane, chloroform extracts did not affect the proliferation in concentration of 0.001mg/ml, 0.01mg/ml, and has toxic effect in concentration of 0.1mg/ml. In methanol extracts, proliferation was observed to have the highest in all concentration. When the concentration of fraction the multiplication rate was high, ALP activity appeared to be highest and also ALP activity was diminished when multiplication rate was low. These results suggested that methanol/water fraction could exert stimulatory effect on osteoblast proliferation in addition to enhancing effect on proliferation differentiation, we learned that Hwang-Chil methanol/water fraction has osteoblastogenesis ability.

[PA3-10] [ 10/18/2002 (Fri) 09:30 - 12:30 / Hall C ]

#### Protection of Paeoniae radix from H<sub>2</sub>O<sub>2</sub>-induced oxidative DNA damage

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Paeoniae radix is commonly used for various woman's health problems in traditional Korean medicine. In order to develop new antioxidant for woman use, the ethanolic extracts of paeoniae radix (PRE) were prepared and various biological activities were evaluated. PRE showed potent free radical scavenging activity and moderate antioxidative activity in vitro, and also showed the protective effect on H<sub>2</sub>O<sub>2</sub>-induced DNA damage in mammalian cell. The major constituents such paeonol, paeoniflorin, oxypaeoniflorin, benzoyl paeoniflorin, gallic acid and methyl gallate were isolated from paeoniae radix. Among them, gallic acid and methyl gallate showed strong activities on free radical scavenging and antioxidative effect without any prooxidant effect, whereas paeoniflorin, oxypaeoniflorin, and benzoyl paeoniflorin did not reveal. Gallic acid and methyl gallate also showed the protective effect on H<sub>2</sub>O<sub>2</sub>-induced DNA damage. Results from the present study demonstrated that Paeoniae radix may be a potential agent for use in the prevention of oxidative stress.

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#### Chemopreventive effect of Ginkgo biloba extract on breast cancer: Regulation of estrogen level

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In situ and circulating estrogen is the most important endocrine hormone that promotes the growth of hormone-dependent breast cancer. Consequently, decrease of estrogen on in situ and circulation can inhibit breast cancer. Estrogen is mainly produced by the ovary in premenopausal women and by peripheral tissues such as adipose tissues in postmenopausal women. The cytochrome p450 (CYP19), aromatase, is a key enzyme in the synthesis of estrogen hormones. Estrogen is metabolized hydroxylated estrogen by cytochrome P450 enzymes, which are expressed in the mammary gland, uterus, brain and other target tissues for estrogen action. Ginkgo biloba extract (GBE) is the active ingredients, which is extracted from the dried, tow-lobed fan-shaped leaves of the Ginkgo biloba tree. This contain in 24 % flavonoid glycosides and 6% terpene lactones. It has reported that some of flavonoids inhibit estrogen synthesis and stimulate E<sub>2</sub> metabolism. Therefore, GBE containing in flavonoids is possible to regulate estrogen level, which has important role of breast cancer. However, little is