

taken and then lymphocytes were isolated. The tail moment(TM) of DNA single-strand breaks in mice splenic and blood lymphocytes were evaluated by single cell gel electrophoresis assay (Comet assay). Comet assay has been applied for detection of DNA damage due to many chemicals like environmental toxic materials. The comet assay is a novel method to assess DNA single-strand breaks, alkali-labile sites in individual cells. TM values of selenium and combined with β -carotene in splenic lymphocytes and blood lymphocytes reduced a little compared to the irradiated control group. In splenic lymphocytes, high administration doses of selenium and β -carotene showed the most radioprotective effect than other experimental groups. In blood lymphocytes, TM values in all experimental groups showed similar. From these results, it showed that selenium was a little radioprotective effect in mice like other antioxidants but combined effect of β -carotene in splenic lymphocytes showed a little unlike blood lymphocytes.

[PA3-6] [04/17/2003 (Thr) 14:00 – 17:00 / Hall P]

Risk analysis of dioxin in human breast milk

Choi Shinaj^o Han JeeYeun Park Jongsei

LabFrontier, Co. Ltd.

Persistent organic pollutants (POPs) have spread throughout the global environment to threaten human health and damage ecosystems, with evidence of POPs contamination in wildlife, human blood, and breast milk documented worldwide.

Breast milk is an ideal medium for assessing exposures to POPs. POPs enter humans largely as contaminants of dietary animal products, where they sequester in adipose tissue, serum, and breast milk and equilibrate at similar levels on a fat weight basis. With long (5–10 year) half-lives, POPs persist in humans and in breast milk as they do in the environment. Breast milk mimics sediments of rivers or lakes as a storage reservoir for POPs, serves as an indicator of past human exposures or environmental conditions, and complements environmental monitoring data in air, water, soil, and food.(Hooper K. et al., 1999).

In Korea, it is reported that the average concentrations of total PCDD/Fs and Co-PCBs in breast milk were 10.108 pg TEQ/g lipid (n=43) collected at 1st day after delivery, 2.432pgTEQ/g lipid (n=21) at 5th pay, 2.105 pg TEQ/g lipid (n=19) at 30th day, and 1.605 pg TEQ/g lipid (n=21) at 100th day, 1.351 pg TEQ/g lipid (n=14) at 150th day , and 1.103 pg TEQ/g lipid (n=6) at 200th day(KIST, 2003). Based on these results, the average lifetime daily exposure dose(LADD) is estimated 1.77E-2pg/kg/day considering breast milk intake rate and body weight of Korean. The LADD is lower than 1~4 pg/kg bw-day as TDI(tolerable daily intake, WHO).

[PA3-7] [04/17/2003 (Thr) 14:00 – 17:00 / Hall P]

Studies on Pharmaceutical Effects of *Dendropanax morbifera* Lev.

Baek WoonBong^o Choung SeYoung

Lab. of toxicology, College of Pharmacy, Kyung Hee University

Hwang Chil (*Dendropanax morbifera* Lev.) belongs to *Aralia elata* group. This plant is only found in Korea and is considered to be along with ginseng. The physiological activities of it have been reported as having scavenging effect on oxygen free radicals and anti-carcinogenic effect. As most of the anti-oxidants were effective on protecting hepatotoxicity from alcohol, hard tissues restoring and skin whitening, the effectiveness of Hwang Chil extracts was screened.

Hwang Chil extracts were given to SD rats (100mg/kg, oral administration) to determine the

effects on the alcohol induced liver damage (6g/kg, oral administration) and were treated (0.001, 0.01 and 0.1mg/ml, final concentration) to human periodontal ligament cells and MG-63 (osteoblastoma cell line) to check the effects on cell growth and bone forming by proliferation, ALP activity and nodule calcification tests. To find out skin whitening effect tyrosinase activity suppression test was performed.

As a result, biochemical parameters (GOT, GPT and ALP) showed that butanol fraction of Hwang Chil had protective effects on the liver alcohol induced damage. Chloroform, ethylacetate and water fraction of Hwang Chil increased human periodontal ligament cell proliferation (more than three times on the day 14), ALP and nodule calcification (twice the number on the day 10). Water extract of Hwang Chil also increased ALP activity and nodule calcification of MG-63 at day 10. The effect of skin whitening was far better than kojic acid which is well known whitening cosmetic.

It was concluded that the unique natural resource Hwang Chil (*Dendropanax morbifera* Lev.) which is exclusively produced in Korea, is found to be a great product effective in protecting the liver from alcohol, restoring hard tissues and whitening skins by suppressing tyrosinase activities which cause melanin. Therefore, Hwang Chil is considered to be a quality herb just like ginseng with full of potentials to be developed into various products including health functional food, functional cosmetic products and drugs that has competitiveness in overseas market.

[PA3-8] [04/17/2003 (Thr) 14:00 - 17:00 / Hall P]

Induction of Quinone Reductase by Obtusifuran from *Dalbergiae* Lignum

Yin HuQuan^o, Oh SeonHee, Kim YounChul, Sohn Dong Hwan, Lee ByungHoon *

college of pharmacy and Medicinal Resources Research center, wonkwang university

NAD(P)H:quinone oxidoreductase (quinone reductase: QR: EC1.6.99.2), a cytosolic FAD-containing flavoprotein, form one of the important component of the phase II drug-metabolizing enzyme systems. It is found in all mammalian species tested and is expressed in many organs including the liver. QR catalyses two-electron reduction of quinones to hydroquinones thereby suppresses the formation of superoxide anion radical. in addition,quinone reductase is induced coordinately with other electrophile-processing Phase II enzymes by a variety of compounds. We initially screened several chinese medicinall drugs for QR inducing activity. The MeOH extract of *Dalbergiae* Lignum showed a potent QR inducing activity in a dose-dependent manner without any significant cytotoxicity. Using activity-guided isolation we separated Obtusifuran QR active components of the extract. The QR inducing property of Obtusifuran suggest the possibility as a competitive candidate for the chemoprevent agent.

[PA3-9] [04/17/2003 (Thr) 14:00 - 17:00 / Hall P]

Anti-platelet Mechanism of Epigallocatechin Gallate

Cho MiRa^o, Lee KyungSup, Lee JungJin, Jin YongRi, Son DongJu, Shin HwaSup, Yun YeoPyo

College of Pharmacy, Chungbuk National University, Cheongju, Korea

We have previously reported that green tea catechins(GTC) displayed anti-thrombotic activity, and that this might be due to anti-platelet rather than anti-coagulation effects. In the present