

## **Inhibitory effects of the stem bark extract of *Eucommia ulmoides* on the proliferation of human tumor cell lines**

**Choi Yeon Hee**<sup>o</sup>, Seo Jee Hee, Kim Jung Sook, Kim Seong-Kie, Choi Sang Un, Kim Young Sup, Kim Young-Kyoon, Ryu Shi Yong

*Korea Research Institute of Chemical Technology, and College of Forrest Science, Kookmin university*

A bioassay-guided fractionation of the stem bark extract of *Eucommia ulmoides* Oliver (Eucommiaceae) led to the isolation of three iridoid constituents, genipin (1), geniposide (3), geniposidic acid (4) as well as (±)-guaiacylglycerol (2) and fatty acid mixtures as active ingredients of the extract responsible for the antitumoral property. The EtOAc soluble part and BuOH soluble part of the extract demonstrated a significant inhibition on the proliferation of cultured human tumor cells such as A549 (non small cell lung), SK-OV-3 (ovary), SK-MEL-2 (melanoma), XF498 (central nerve system) and HCT-15 (colon) in vitro, whereas the remaining water soluble part exhibited a poor inhibition. The intensive investigation of the EtOAc soluble part and BuOH soluble part of the extract yielded an iridoidal component, genipin, guaiacylglycerol, geniposide, geniposidic acid and large amounts of fatty acid mixtures as active components

[PD2-3] [ 2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function ]

## **Various Bioactivities of Two Polyphenolic Compounds from the Brown Alga *Grateoupia elliptica***

**Kim Eun Sook**<sup>o</sup>, Kim Chan Sook, Lee Bong Ho, Choi Byoung Wook, Ryu GeonSeek

*Dept. of Chemical Technology, Hanbat National University*

In the course of search for various bioactive compounds from marine algae, we found strong antioxidant activity of the methanolic extract of the brown alga *G. elliptica*. Chromatographic purification [ODS flash, gel-filtration on Sephadex LH-20, HPLC] of the BuOH layer of the methanolic extract afforded two known polyphenolic compounds, 6,6'-bieckol (1) and dieckol (2). Compound 1 showed acetylcholinesterase (AChE) and butyrylcholinesterase (BuChE) inhibitory activities, free radical scavenging activity on DPPH (1,1-diphenyl-2-picryl-hydazyl) with IC<sub>50</sub> values of 91.2, 45.6 and 15.5  $\mu\text{g}/\text{mL}$ , respectively. Specially, compound 1 showed COX-1(20.78%) and COX-2(26.46%) inhibitory activities at 10  $\mu\text{M}$ , while compound 2 showed AChE and BuChE inhibitory activities, antioxidant activity with IC<sub>50</sub> values of 18.0, 26.7 and 9.9  $\mu\text{g}/\text{mL}$ , respectively.

[PD2-4] [ 2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function ]

## **New Cytotoxic Metabolites from a Marine Sponge *Homaxinella* sp.**

Mansoor Tayyab A., Hong Jong Ki, Lee Chong-O, Sim Chung Ja, Im Kwang Sik, Jung Jee H.

*College of Pharmacy, Pusan National University, Busan., Korea Basic Science Institute, Seoul., Korea Research Institute of Chemical Technology, Daejeon., Hannam University, Daejeon.*

Three new butenolides (1-3), and a new cyclopentenone derivative (4) were isolated from a marine sponge *Homaxinella* sp. by bioactivity guided fractionation. The gross structures were established on the basis of NMR and MS analyses. The stereochemistry of the butenolides and cyclopentenone derivative was defined on the basis of optical rotation and CD spectroscopy. The compounds were tested against a panel of five human solid tumor cell lines and displayed marginal to significant cytotoxicity.

[PD2-5] [ 2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function ]

## **Phenolic Compounds from Fruits of *Amorpha fruticosa* L.**

**Lee hakju**<sup>o</sup>, Lee HyunJung, Park IlKwon, Shin SangChul, Lee MyungKoo, Paik KiHyon

*Div. Wood Chemistry & Microbiology, Korea Forest Research Institute, Department of Forest Resources and Environmental Science, Korea University, Div. Forest Insect Pests and Disease, Korea Forest Research Institute,*

College of Pharmacy, and Research Center for Bioresource and Health, Chungbuk National University, Department of Forest Resources and Environmental Science, Korea University,

This study was carried out to examine the constituents of *Amorpha fruticosa* (Leguminosae), a shrub originated from North Africa. Dried and ground fruit of *A. fruticosa* were extracted with methanol and then concentrated to give the crude extracts. The crude extracts was successively fractionated with organic solvents, such as n-hexane,  $\text{CH}_2\text{Cl}_2$  and EtOAc. Seven compounds were isolated from the fruits of *A. fruticosa*. On the basis of spectroscopic data, the structures of these compounds were determined as: kaempferol 7-O- $\alpha$ -L-rhamnopyranoside (I), methyl 3, 4, 5- trihydroxybenzoate (methyl gallate, II), tephrosin (III), dalbinol (IV), gallic acid (V), 2",4",5",7-tetramethoxyisoflavone (VI) and Dalbinol 2"-O- $\beta$ -D-Glucopyranoside (VII) respectively. In addition, treatment of PC12 cells with methyl gallate (II) increased dopamine content in a dose-dependent manner (120.6 % inhibition at 5 mg/ml for 24 hr).

[PD2-6] [ 2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function ]

### **Anti-Oxidant and Hepato-protective Activities of the Stems of *Acanthopanax senticosus***

**Son Dongwook**<sup>o</sup>, Ryu Jiyoung, Kang Jungil, Lee Sang Yun, Kim Hyun-Su, Lee Sanghyun, Jung Sang Hoon, Lee Yeon Sil, Shin Kuk Hyun

*R & D Center for Functional Foods, Institute of Food and Culture, Pulmuone Co. Ltd, Natural Products Research Institute and College of Pharmacy, Seoul National University, Seokwon Life Science Research Institute, World Sea Green Co. Ltd*

The anti-oxidant activities of *Acanthopanax senticosus* stems were investigated. The n-BuOH fraction of *A. senticosus* stems exhibited a significant decrease in serum transaminase activities elevated by hepatic damage induced by  $\text{CCl}_4$ -intoxication in rats. The n-BuOH fraction inhibited the sGPT activities by 65.79%. The n-BuOH fraction showed the increase in the anti-oxidant enzymes such as hepatic cytosolic superoxide dismutase, catalase and glutathione peroxidase activities by 30.31, 19.82 and 155%, respectively, in  $\text{CCl}_4$ -intoxicated rats. These results suggest that the stems of *A. senticosus* possess not only the hepatoprotective, but also the anti-oxidant activities in rats.

[PD2-7] [ 2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function ]

### **Two new megastigmane glycosides from *Phyllanthus ussuriensis***

**Ryu Minyoul**<sup>o</sup>, Kim Chul Young, Kim Jinwoong

*College of Pharmacy, Seoul National University, Seoul 151-742, Korea*

*Phyllanthus ussuriensis* Rupr. et Maxim. (Euphorbiaceae) has long been used in folk medicine to treat kidney and urinary bladder disturbances, intestinal infections, diabetes, and hepatitis. Reported chemical constituents of this species are one flavonoid (rutin), two gallotannins (gallic acid, methyl gallate) and two ellagitannins. An investigation of the n-BuOH fraction of *P. ussuriensis* led to the isolation of two new megastigmane glycosides, 10-hydroxy-4,7-megastigmadiene-3-one-9-O-b-D-glucopyranoside (1), 10-hydroxy-4,6-megastigmadiene-3-one-9-O-b-D-glucopyranoside (2) and two known compounds roseoside (3) and 3-oxo-a-ionol-9-O-b-D-glucopyranoside (4). The structural elucidation of these compounds was based on the analysis of spectroscopic data.

[PD2-8] [ 2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function ]

### **Catechin-7-O- $\beta$ -D-apiofuranoside: An Anti-inflammatory constituent from *alnus japonica* bark**

**Jeong ChoonSik**<sup>o</sup>, Kang MinHee, Hyun Jin Ee, Lim DukYun

*College of Pharmacy, Dongduk Women's University*

*Alnus japonica* (Betulaceae) has been traditionally used for purifying blood, and curing feces containing blood,