

*Prunella vulgaris* Linne var. *ilacina* Nakai (Labiatae) is a perennial herb widely-distributed in the temperate regions of Korea, Japan and China. The spikes of this plant, *Prunellae Herba*, is red-violet and lips shape, and blossom between May and July. To obtain the cytotoxic constituents from this plant, the spikes were extracted with MeOH and MeOH Ext. was subsequently fractionated into four parts, methylene chloride, n-butanol-1, n-butanol-2 and water fractions. Chromatographic separation of the n-butanol-1 fraction has yielded four triterpenoids. Their structures were elucidated by chemical and spectral evidences. All of the compounds are  $\alpha$ -amyrin type.

Compound 1 is 3 $\beta$ -hydroxyurs-12-ene-28-oic acid (ursolic acid) and compound 2 is 2 $\alpha$ , 3 $\alpha$ -dihydroxyurs-12-ene-28-oic acid. Compound 3 is 2 $\alpha$ , 3 $\alpha$ , 19 $\alpha$ -trihydroxyurs-12-ene-28-oic acid (euscaphic acid) and compound 4 is the triterpenoid which has seven hydroxyl groups, two carboxyl groups and two double bonds. Compound 1 was previously isolated from this plant and reported, so this compound is already well known. On the other hand, Compounds 2 and 3 were known, but were first isolated from this plant.

Compounds 1 and 4 showed approximately 80% cytotoxicity for HepG2 cell in low concentration of 5 $\mu$ g/ml and compounds 1 and 2 exhibited above 95% topoisomerase I inhibition ability in concentration of 50 $\mu$ g/ml. In here, it is the remarkable fact that compounds 1 and 2 have both cytotoxicity and topoisomerase I inhibition ability.

[PD2-2] [ 10/19/2001 (Fri) 14:00 - 17:00 / Hall D ]

### Composition of the Essential Oil of *Chrysanthemum sibiricum*, and Biological Properties

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GC-MS data on the volatile oil of *Chrysanthemum sibiricum* herbs led to the identification of 2-methoxythioanisole (1), (+)-camphor (2), geraniol (3), citral (4), thymol (5), eugenol (6), beta-caryophyllene oxide (7), beta-caryophyllene (8), beta-eudesmol (10), juniper camphor (11) together with an unknown substance (9) based on the mass spectral library and literature data. The components were confirmed by the comparisons with authentic specimens. The oil of *C. sibiricum* (CS-oil) exhibited significant cytotoxicities on HL-60 (IC<sub>50</sub> 12.5 microg/ml) cell and mild on HepG-2 cell (IC<sub>50</sub> 102.4 microg/ml), though the free-radical scavenging activity was found not to be potent (IC<sub>50</sub> 97.2 microg/ml). Treatment of CS-oil with 10 mg/kg dose (i.p.) decreased the content of malondialdehyde induced by bromobenzene by 35%, which activity was comparable to that of 20 mg/kg kaikasaponin III but weaker than 10 mg/kg tectorigenin. It was suggested that the unique composition of CS-oil might contribute to the chemopreventive effect for cancer.

[PD2-3] [ 10/19/2001 (Fri) 14:00 - 17:00 / Hall D ]

### Chemical Components from the Stem Bark of *Kalopanax septemlobus*

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The stem bark of *Kalopanax septemlobus* (Thunberg) Koidz. (Araliaceae) commonly distributed throughout Korea has been used as traditional medicine for effective on antiinflammatory, expectorant, tranquilizer and antirheumatic. The previous authors reported various saponins and lignans from *Kalopanax* species. The present paper describes isolation and structural characterization of two compounds which were isolated for the first time from *Kalopanax* species. Their structures were 3,3'-bis

(3,4-dihydro-4-hydroxy-6-methoxy-2H-1-benzopyran) and (-)-balanophonin.

[PD2-4] [ 10/19/2001 (Fri) 14:00 – 17:00 / Hall D ]

### **Production of Polyclonal Antibodies against Ginsenoside Rg<sub>3</sub>-Bovine Serum Albumin Conjugate**

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In order to establish enzyme-linked immunosorbent assay for the determination of protopanaxadiol, polyclonal antibodies were raised from rabbits using ginsenoside Rg<sub>3</sub> (GRg<sub>3</sub>)-bovine serum albumin (BSA) conjugate as immunogen.

GRg<sub>3</sub> was conjugated with BSA by periodate oxidation method through its glucose moiety. 2 mg GRg<sub>3</sub>-BSA conjugate were dissolved in 1 ml saline and emulsified with the same volume of complete Freund's adjuvant. 1 ml emulsion was then injected twice at a biweekly interval into each rabbit subcutaneously and intramuscularly at multiple sites on the back and legs. The same dose of the conjugate emulsified with incomplete Freund's adjuvant in the same ratio was used as a booster, and given intramuscularly on the legs once every 2 weeks. Blood was obtained from a marginal ear vein 11 days after the booster injections.

Both GRg<sub>3</sub> and protopanaxadiol competitively inhibited the antibody binding to GRg<sub>3</sub>-ovalbumin on solid phase, a coated antigen on the well. Further characterization of the antibody is under investigation.

[PD2-5] [ 10/19/2001 (Fri) 14:00 – 17:00 / Hall D ]

### **Study of constituents from head of *Panax ginseng* and the evaluation of its antigastritic and antiulcerative effects**

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Head of *Panax ginseng* C. A. Meyer indicates its growth number of years and it has been widely used for supplying energy to weak person. However the underlying mechanisms are not sufficiently reported so far.

We previously reported the antigastritic and antiulcerative effect of the head of *Panax ginseng* methanol extract and butanol fraction on several gastritis and ulcer models in rats.

It is generally known that gastritis is induced by imbalance between aggressive factors and protective factors. Nowadays, as the roles of inflammatory response and free radicals are emerged, the components that have free radical scavenging effects are highlighted.

Thus, the present study deals with the protein ratio, free radical scavenging effect, effect on gastritis model in rats and separation of the head of *Panax ginseng*. Butanol fraction was separated into 6 subfractions by silica gel chromatography with chloroform: methanol(10-50% gradient). Among 6 fractions, fr.5 was significantly effective on HCl-ethanol gastritis model in rats. Fr.5 was separated into six sub-subfractions with chloroform: methanol: water (20.3: 10.7: 2.3), and three of sub-subfractions (fr.5-2, 5-3, 5-4) showed the most significant effectiveness.

[PD2-6] [ 10/19/2001 (Fri) 14:00 – 17:00 / Hall D ]

### **Identification and Analysis of Astragalosides from Adventitious Root Cultures of *Astragalus mongholicus***