

Isolation and Structure Determination of Cytotoxic Compounds with Topoisomerase I and II Inhibitory Activity from the spikes of *Prunella vulgaris var. lilacina*

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*Prunella vulgaris var. lilacina* (Labiatae) has been used as a Korean traditional medicine for the treatment of fever, inflammation, urinary disadvantage and cancer. We previously isolated three  $\alpha$ -amyrin triterpenoids from *n*-butanol-1 extract. They are 3 $\alpha$ -hydroxyurs-12-ene-28-oic acid (ursolic acid), 2 $\alpha$ , 3 $\alpha$ -dihydroxyurs-12-ene-28-oic acid and 2 $\alpha$ , 3 $\alpha$ , 19 $\alpha$ -trihydroxyurs-12-ene-28-oic acid (euscaphic acid) exhibiting cytotoxicity and topoisomerase I inhibition.

In our continuous research for anti-cancer compounds from this plant, we found that the methylene chloride extract as well as *n*-butanol-1 extract of this plant showed cytotoxic activity against HepG2 cell line and topoisomerase I and II inhibition. By activity-guided isolation, we isolated several compounds from methylene chloride extract.

[PD2-11] [ 10/17/2002 (Thr) 09:30 - 12:30 / Hall C ]

Comparison of Ginsenosides Composition in Various Panax Ginseng Roots Cultivated in Different Places and Years

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This study was carried out to obtain basic informations that can be used in index for Korea ginseng (*Panax ginseng* C.A. Meyer) cultivated in East Asia (Geumsan, Ganghwa, Punggi, Umsong, Jinan, Hongchon, Jilin, Nagano). Ginsenosides composition in various Panax ginseng roots cultivated in different places and years were carried by the Shibata method. The average about total saponins and each ginsenosides content of four year-age Ginseng *Radix aquosa* cultivated in Korea were higher than those of ginseng cultivated for its longer period. The order of the total saponins content per unit weight was four year-age > five year-age > six year-age > three year-age Ginseng *Radix aquosa*. Especially, four year-age Ginseng *Radix aquosa* cultivated in Geumsan contained the highest ginsenosides among the East Asia area. But, six year-age Ginseng *Radix aquosa* cultivated in Ganghwa contained the highest ginsenosides among the cultivated in Korea.

[PD2-12] [ 10/17/2002 (Thr) 09:30 - 12:30 / Hall C ]

Quantitative Analysis of 6-gingerol in the Zingiberis Rhizoma by Processing Methods

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On the quality control of commercial Zingiberis Rhizoma and its processed product, quantitative determination of 6-gingerol using HPLC method has been conducted. Quantitative analysis of 6-gingerol in Zingiberis Rhizoma showed average 0.359% in 14 samples collected throughout the regions of Korea. The contents of 6-gingerol in Zingiberis Rhizoma were decreased during the processing procedure (0.306%).

[PD2-13] [ 10/17/2002 (Thr) 09:30 - 12:30 / Hall C ]

Three New Diarylheptanoids from the Roots of Juglans mandshurica

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The roots of *Juglans mandshurica* Maximowicz (Juglandaceae) have been used as a folk medicine for treatment of cancer in Korea. Several naphthoquinones and naphthalenyl glucosides from *Juglans* species have been reported (1-7). In the course of isolating cytotoxic compounds from the roots of this plant, we have isolated six naphthalene glycosides, four tetralone, one naphthalene carboxylic acid glucoside and nine diarylheptanoids (8-13). In this poster, we report three novel diarylheptanoids (1-3) from the roots of *Juglans mandshurica* and their structures were elucidated on the basis of spectroscopic studies.

[PD2-14] [ 10/17/2002 (Thr) 09:30 - 12:30 / Hall C ]

In vivo Antinociceptive and Anti-inflammatory Effect of the Two Triterpenes, Ursolic Acid and 23-Hydroxyursolic Acid, of *Cussonia bancoensis*

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Triterpenoids, Ursolic acid (1), 23-hydroxyursolic acid (2), and tormentic acid (3) were obtained by the hydrolysis of BuOH fraction of *Cussonia bancoensis* extract and further chromatographic isolation to test antinociceptive and anti-inflammatory effect of *C. bancoensis* (Araliaceae). Compound 1 and 2 exhibited anti-nociceptive effects, which were determined by acetic acid-induced writhing test and hot plate test. However, the effect of tormentic acid was not significant. The effect of 2 was much more potent than 1. Compounds 1 and 2 significantly inhibited 1%-carrageenan-induced edema in the rat. These results suggest that ursolic acid and 23-hydroxyursolic acid are responsible for the anti-nociceptive and anti-inflammatory effect of *C. bancoensis*.

[PD2-15] [ 10/17/2002 (Thr) 09:30 - 12:30 / Hall C ]

Antimicrobial effects of ocotillone isolated from the stem bark of *Ailanthus altissima*

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Bioassay-directed chromatographic fractionation of a methylene chloride extract of *Ailanthus altissima* indicated the presence of 20(S), 24(R), epoxy-25-hydroxydammarane-3-one (compound 1, ocotillone), which was isolated from this plant for the first time. Antimicrobial activity of compound 1 was measured by its degree of growth inhibition against bacterial and fungal cells and by a hemolytic assay with human erythrocytes, respectively. The results revealed potent antibacterial activity against Gram-negative bacteria, *P. aeruginosa*, and *S. typhimurium* that were without hemolytic activity, whereas compound 1 had weak antimicrobial activity against Gram-positive bacteria and fungi. These results demonstrated that compound 1 has a more essential role in antibacterial activity against Gram-negative bacteria that is without hemolytic activity than Gram-positive bacteria and fungi. This is the first report of the biological activities of compound 1.

[PD2-16] [ 10/17/2002 (Thr) 09:30 - 12:30 / Hall C ]

Structure-Activity Relationship of Oleanane Disaccharides isolated from *Akebia quinata* on Both Cytotoxicity against Cancer Cells and NO inhibition against LPS-induced Macrophage 264.7

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