

acid moiety using the vinyl addition and the ring-closing metathesis (RCM).

[OD2-1] [2003-10-11 10:15 - 10:30 / ASEM Hall Meeting Room 203]

Dereplication and Quantification of Steroidal Saponins in Polygonatum Species Using LC-MS

Kim Jinwoong, Ahn Mi-Jeong^o

College of Pharmacy, Seoul National University

Rhizomes of Polygonatum species belong to Liliaceae are important herbal drugs in the traditional medical practice of Asian region. Two representative Chinese drugs derived from this genus are Hwangjeong and Okjuk. Though botanical origins of these drugs are officially listed as *P. falcatum*, *P. sibiricum* and *P. kingianum* for Hwangjeong and *P. odoratum* var. *pluriflorum* for Okjuk in the Korean Pharmacopoeia and Korean Herbal Pharmacopoeia, respectively, they are often sold as a mixture of several different species in the market. Therefore, a simple HPLC-MS technique was developed to differentiate these species in this study. This approach was focused on the detection of steroidal saponins that were reported to show hypoglycemic activity. In addition, this method was used to analyze commercial Polygonatum species products and the related tea products. Five spirostanol glycosides (1-5) were isolated from *P. sibiricum* and used as standard compounds for qualitative and quantitative analysis of Polygonatum species. Among them, compounds 1, 3 and 5 were found to be new spirostanol glycosides through dereplication procedure using MSⁿ analysis, and other spectroscopic data. These new glycosides have a 6-O-acetyl- β -D-galactopyranose as a common moiety in their structures. The relative distribution of these compounds in each extract of five Polygonatum species was established by HPLC-ESI-MS with SIM mode. Furthermore, eleven Polygonatum species herbal drugs and seven herbal tea products were analyzed. It was found that LC-MS method could be utilized to differentiate these herbal drugs and tea products effectively. In conclusion, the LC-MS technology can improve the accuracy, sensitivity and speed of the analysis when it was compared to the conventional HPLC method.

[OD2-2] [2003-10-11 10:30 - 10:45 / ASEM Hall Meeting Room 203]

Cytotoxic constituents of Zingiber cassumunar

Han Ah-Reum^o, Kim Hyang-Rim, Min Hye-Young, Windono Tri, Jeohn Gwang-Ho, Lee Sang Kook, Seo Eun-Kyoung*

College of Pharmacy, Ewha Womans University, 11-1 Daehyun-dong, Seodaemun-ku, Seoul 120-750, Korea, College of Pharmacy, University of Surabaya, JL. Raya Kalirungkut, Surabaya 60293, Indonesia

A new phenylbutenoid dimer, (\pm)-trans-3-(3'-methoxy-4'-hydroxyphenyl)-4-[(E)-3''',4'''-dimethoxystyryl]cyclohexene (1), were isolated from the rhizomes of Zingiber cassumunar along with three known phenylbutenoids, (\pm)-trans-3-(3',4'-dimethoxyphenyl)-4-[(E)-3''',4'''-dimethoxystyryl]cyclohexene (2), 4-(3',4'-dimethoxyphenyl)but-1,3-diene (3), and 4-(2',4',5'-trimethoxy-phenyl)but-1,3-diene (4), and a known heptanoid, curcumin (7), as cytotoxic constituents against several human cancer cell lines. In addition, two known phenylbutenoids, (E)-3-hydroxy-1-(3',4'-dimethoxy-phenyl)but-3-en-1-yl acetate (5) and (E)-4-(3',4'-dimethoxyphenyl)but-3-en-1-ol (6), were also obtained as inactive constituents in the present study. Structure elucidation of compound 1 will be presented as well as biological activity of the compounds 1-7.

[OD2-3] [2003-10-11 10:45 – 11:00/ ASEM Hall Meeting Room 203]

Antioxidant Activity of Cercis chinensis and Its Protective Effect on Skin Aging

Na MinKyun 1,2^o, Bae KiHwan 1), Hong NamDoo 2), Miwa Nobuhiko 3)

1 College of Pharmacy, Chungnam National University, 2 Jakwang Research Institute, Hansaeng Cosmetics Co., Ltd, 3 Department of Biotechnology, Hiroshima Prefectural University School of BioSciences

Reactive oxygen species are capable of damaging biomolecules such as lipids, proteins, and DNA, which can not only lead to various diseases, but also oxidative damage resulting aging. In our previous study, *Cercis chinensis* (Leguminosae) showed a potent antioxidant activity. Twenty compounds including a new flavonol glycoside were isolated through antioxidant activity-guided fractionation. *C. chinensis* and some of the

constituents exhibited a potent antioxidant activity on the free radicals and lipid peroxidation and a notable protective effect on the t-BuOOH induced oxidative damage. In vivo test of skin damage induced by UVB irradiation, the extract of *C. chinensis* and a constituent, piceatannol, exhibited a significant protective effect. The life-span of the HEK-N/F cells were extended by 1.21-2.12 fold as a result of the continuous administration of 3 µg/ml of *C. chinensis* and the active constituents compared to that of the control. These observations were attributed to the inhibitory effect of the *C. chinensis* extract and its constituents on the age-dependent shortening of the telomere. Consequently, it is suggested that *C. chinensis* and its constituents can protect the skin cells from oxidative stress and thereby prevent cellular aging.

[OD2-4] [2003-10-11 11:00 - 11:15 / ASEM Hall Meeting Room 203]

New inhibitors of the NF-κB activation and NO production from *Artemisia sylvatica*

Jin Huizi^o, Lee Jeong Hyung, Lee Dongho, Kim Young Ho, Lee Jung Joon

Anticancer Agents Research Laboratory, Korea Research Institute of Bioscience and Biotechnology, P.O. Box115, Yusong, Taejon 305-600, Korea, and, Anticancer Agents Research Laboratory, Korea Research Institute of Bioscience and Biotechnology, P.O. Box115, Yusong, Taejon 305-600, Korea, College of Pharmacy, Chungnam National University, Taejon 305-764, Korea

Three new guaianolide type of sesquiterpene lactones, 8α-angeloyloxy-1α-hydroxy-3α,4α-epoxy-5α,7αH-10(14),11(13)-guaiadien-12,6α-olide (1), 8α-methylbutyryloxy-1α-hydroxy-3α,4α-epoxy-5α,7αH-10(14),11(13)-guaiadien-12,6α-olide (2), and 8α-isovaleryloxy-1α-hydroxy-3α,4α-epoxy-5α,7αH-10(14),11(13)-guaiadien-12,6α-olide (3), together with six known sesquiterpenes, artemisolide (4), 3-methoxytanaphtholide (5), deacetylalaurenobiolide (6), moxartenolide (7), arteminolide B (8), and arteminolide D (9) were isolated by bioassay-guided fractionation using the NF-κB mediated reporter gene assay system. All the isolated compounds showed strong inhibitory activity on both NF-κB activation and NO production with IC₅₀ values of 0.49 µM ~ 7.17 µM and 1.46 µM ~ 6.16 µM, respectively. These results suggest that arteminolides, sesquiterpene lactone guaianolides and moxartenolide are novel inhibitors of NF-κB activation and NO production and could be used as anti-inflammatory agents.

[OD2-5] [2003-10-11 11:15 - 11:30 / ASEM Hall Meeting Room 203]

Four new lanostane-type triterpenes from *Ganoderma applanatum*

Shim Sang Hee^o, Ryu Ji Young¹, kim Ju Sun, Kang Sam Sik, Chung Sang Hun, Lee Yeon Sil², Lee SangHyun, Shin Kuk Hyun²

Natural Products Research Institute and College of Pharmacy, 1Pulmuone R&D center, 2Seokwon Life Science Research Institute

Four new lanostane-type triterpenes were isolated from CH₂Cl₂ fraction of *Ganoderma applanatum* (Polyporaceae). Their structures were determined as (20S)-3β, 7 β,20,23ζ-tetrahydroxy-11,15-dioxolanosta-8-en-26-oic acid, (20S)-7β,20,23ζ-trihydroxy-3,11,15-trioxolanosta-8-en-26-oic acid, 7β,23ζ-dihydroxy-3,11,15-trioxolanosta-8,20E(22)-dien-26-oic acid, and 7β-hydroxy-3,11,15,23-tetraoxolanosta-8,20E(22)-dien-26-oic acid methyl ester on the basis of spectral data.

[OD4-1] [2003-10-11 11:30 - 11:45 / ASEM Hall Meeting Room 203]

Noninvasive blood glucose monitoring system based on NIR spectroscopy with a contact pressure control device

Kang Naroo^o, Baek Ju Hyun, Woo Young Ah, Kim Hyo Jin

Department of pharmacy, Dongduk women's university

The purpose of this study is to improve repeatability of a non-invasive blood glucose measurement. The portable NIR system that was newly integrated by our lab includes a tungsten halogen lamp, a specialized reflectance fiber optic probe and a photo diode array type InGaAs detector, which was developed by a microchip technology based on the lithography. Reflectance NIR spectra of finger tip were recorded by using a fiber optic probe. The probe was fixed in the system and subjects put their finger on the probe head. But, difference of