Lee HyunJin°, Jung Da-Woon, Sung ChungKi

College of Pharmacy, Channam National University, Kwangju 500-757, Korea

This study was carried out to analysis of astragalosides from the adventitious root of *in vitro* cultures of *Astragalus mongholicus*(Leguminosae). Adventitious roots of *Astragalus mongholicus* was cultured in Gamborg B5 basal medium containing 3% sucrose at 25℃ in the dark at 100rpm. During culture periods from 0 to 42 days, the adventitious roots were harvested at intervals of 7 days. Astragalosides were extracted from dried adventitious roots of *Astragalus mongholicus* by reflux with 70%EtOH. After filtration, the extracts were combined and the solvent was evaporated. The residue was partitioned between *n*-BuOH and H_2O. *n*-BuOH fraction was evaporated to dryness and dissoved in MeOH.

As a result, the patterns of growth curve of fresh weight mass and dry weight mass showed almost same pattern. that is, they showed the highest after 28 days, 2.47g/100ml flask and 0.27g/100ml flask of dry weight, respectively. Astragalosides from adventitious roots were identified by TLC(silica gel RP-18, MeOH:H_2O=4:1) and their contente are being measured.

[PD2-7] [10/19/2001 (Fri) 14:00 - 17:00 / Hall D]

Production of Dammarane Sapogenins in Hairy Root Culture of Panax ginseng Following Elicitation

Jung Da-Woon°, Kim JaeOk, Li Hai Guang, Sung ChungKi

College of Pharmacy, Chonnam National University, Kwangju 500-757, Korea

In order to investigate effects of elicitation on the production of dammarane-type triterpenes, methyl jasmonate (MeJ) was added to hairy root cultures of *Panax ginseng*.
At the beginning of a culture cycle, the hairy roots were treated with MeJ and cultured in half-strength Murashige & Skoog medium at 25 °C in the dark with shaking (100 rpm). At culture day 0, 7, and 14, the roots were harvested and extracted with acetone by ultra sonication. The contents of protopanaxadiol (PPD) and protopanaxatriol (PPT) were analyzed respectively using enzyme-linked immunosorbent assays.
As a result, MeJ in the range 5 μM-125 μM strongly improved PPD production in a dose-dependent manner. Whereas the effects of MeJ on PPT production were much weaker than those on PPD production. Higher than 125 μM, MeJ decreased PPT production in *P. ginseng* hairy roots. It was also found that MeJ treatments inhibited the growth of *P. ginseng* hairy roots.
This study could be useful for the elucidation of the biosynthetic pathway of dammarane saponins and their aglycones in *P. ginseng*.

[PD2-8] [10/19/2001 (Fri) 14:00 - 17:00 / Hall D]

New Angiogenesis Inhibitors from Marine Invertebrates

Jeong SeiJoon°, Miyamoto Tomofumi, Higuchi Ryuichi

Department of Natural Products Chemistry, Graduate School of Pharmaceutical Sciences, Kyushu University, Japan

In the course of our search for signal transduction inhibitor of endothelial cells, we have investigated the anti-angiogenic activity of Japanese marine invertebrates. Among them, the EtOH extracts of the bryozoan *Dakaria subovoidea*, the sponge *Amphimedon paraviridis*, and the sponge *Chondrosia chucalla*

exhibited potent inhibitory activities against the proliferation of bovine aorta endothelial cells (BAECs). Bioassay-guided fractionation of the extracts led to the isolation of six anti-angiogenic compounds (**1-6**), 5,7-dihydroxy-1-methyl-6-oxo-6H-anthra[1,9-bc]thiophene (**1**), 5,7-dihydroxy-1-methoxycarbonyl-6-oxo-6H-anthra[1,9-bc]thiophene(**2**), and 1,8-dihydroxyanthraquinone (**3**) from the bryozoan *D. subovoidea*, 1,3-dimethylisoguaninium (**4**) from the sponge *A. paraviridis*, and 5'-deoxytoyocamycin (**5**) from the sponge *C. chucalla*. The structure elucidation of compound (**6**) from the sponge *C. chucalla* is in progress. Compounds (**1-6**)selectively inhibited bFGF-induced mitogenesis of BAECs. Among these compounds, new compounds **1** and **4** showed more selective inhibition of BAECs mitogenesis than the other compounds in a dose-dependent manner.

[PD2-9] [10/19/2001 (Fri) 14:00 ~ 17:00 / Hall D]

Identification and Analysis of the Constituents in the Fruits of Acanthopanax sessiliflorum by HPLC and LC-MS

Lee Sanghyun°, Shin KukHyun, Ji Jun, Lim SoonSung, Kim BakKwang[1], Cho SeonHaeng[2]

Natural Products Research Institute, Seoul National University, [1]College of Pharmacy, Seoul National University, [2]Kong Ju University of Education

In a previous study, as part of elucidation of the usefulness of the fruits of *A. sessiliflorum* for health foods as well as for naturally occurring drugs, we isolated and characterized various active principles from this plant parts. In this study, we could also identify active principles such as eleutheroside E, B and chiisanoside by HPLC and LC-MS system permitting the identification of the presence from this plant parts. All separations were performed by reverse phase HPLC [water : acetonitrile = 9:1→5:5 (gradient elution), flow rate and detection wavelength at ambient temperature to 1.0 ml/min and 210 nm]. Four micro liters of the n-butanol fraction diluted with methanol was injected and peaks were assigned by spiking the samples with standard compounds, and comparison of retention times. The calibration curves for chiisanoside was linear from 0.2 to 2.6 μg/ml. The regression equation for chiisanoside were Y=149282.7X-3519.8 (R^2=0.9982). Our system was successfully applied for the LC-MS analysis of the butanol fraction. The chiisanoside was readily assigned in sample with its molecular ions and fragment peaks at 955 $[M+H]^+$ and 485 $[M-(Glc-Glc-Rha)+H]^+$ if detection was performed in positive ESI mode. In conclusion, the method presented in this report facilitates the analysis of chiisanoside, eleutheroside E and B in the fruits of *A. sessiliflorum* significantly by HPLC within 30 min..

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

Bromotyrosines and Related Compounds from a Two-Sponge Association

Park Y. J., Alam N., Hong J.-K., Im K. S., Jung J. H.*

College of Pharmacy, Pusan National University, Pusan, Korea Basic Science Institute, Seoul

Although bromotyrosines are considered as the chemotaxonomic marker of the sponges of the order Verongida, they have recently been isolated from the sponges of other orders. In our search for cytotoxic metabolites from an association of two non-Verongid sponges, Jaspis sp. and Poecillastra wondoensis, we have isolated a number of bromotyrosines and related compounds. Their structures have been established on the basis of spectroscopic data.

[PD2-11] [10/19/2001 (Fri) 14:00 - 17:00 / Hall D]