Ahn H°, Ryu J-H

College of Pharmacy, Sookmyung Women's University

The overproduction of nitric oxide (NO) by inducible nitric oxide synthase (i-NOS) is one of the major characteristic features of inflammation and sepsis. We intended to find the i-NOS inhibitors from plants by using the macrophage cell culture system. RAW 264.7 cells were activated by lipopolysaccharide (LPS) in the presence of plant samples, and the amounts of NO formed by i-NOS were determined by using Griess reagent in the form of NO_2^-. One active compound was purified from *Broussinetia kazinoki* by activity-guided fractionation, and the structure was identified as kazinol B from the spectral analysis. This compound showed strong inhibitory activity of NO production in LPS-activated macrophages and the IC_{50} value (the concentration required for the 50% inhibition of NO production compared to the LPS control) was 21.6 μM. The co-treatment of kazinol B with LPS to the cells caused the decrease of NO production, while the post-treatment of sample didn't. These results might come from the inhibition of i-NOS expression by kazinol B in LPS-treated macrophages, not from the inhibition of i-NOS enzyme activity.

[PD2-13] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Isolation of Monoamine Oxidase-B Inhibitory Compounds from the fruit and the stem of Opuntia ficus-indica var. saboten

Han YN and Choo Y°

Natural Products Research Institute, Seoul National University, Seoul 110-460, Korea

Three kinds of citric acid methylesters and malic acid monomethylester were isolated from the fruit and the stem of *Opuntia ficus-indica* var. *saboten* Makino using *in vitro* monoamine oxidase inhibition assay-guided isolation method. The MAO-B IC_{50} values of citric acid monomethylester, citric acid dimethylester, citric acid trimethylester, and malic acid monomethylester were 0.35mg, 0.40mg, 1.27mg, and 0.27mg, respectively. However, the MAO-A IC_{50} values showed the only marginal activities. These data indicated that the separated organic acid methylesters inhibited MAO-B activity more strongly than that of MAO-A.

[PD2-14] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

A Bioactive Aliphatic Diamine, Harmonine, from Ladybird Beetles

Choi IS°, Jung JH, Lee CO*, Im KS, Bae BH

College of Pharmacy, Pusan National University, *Korea Research Institute of Chemical Technology, Taejon

A known alkaloid, harmonine, has been isolated from two ladybird beetles, *Aiolocaria hexaspilota* and *Harmonia axyridis*. Harmonine was known as a defensive chemical of ladybird. The compound showed a significant toxicity to brine shrimp larvae and cytotoxicity against human tumor cells.

[PD2-15] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Phytochemical constituents and Biological activities from aerial part of Angelica gigas Nakai.

Moon HI°, Ahn KT, Oh JS, Choi B, Hong SI, Lee KR, Zee OP

Pharmacognosy Lab, Sung Kyun Kwan University

The root of Angelica gigas Nakai.(Umbelliferae) has been used as an analgesic and fever remedy, and for treatment of blood pressure in Chinese medicine, whereas the freshly young shoots are used for edible food. The fresh leaves have unique flavor and the components of essential oil were determinded. However, there are no further chemical works nor are there any reports on biological activity of extracts from leaves of this species. This experiment describes isolate and elucidate structure of the components from leaves and to evluate the radical Scavenging activity on DPPH radical for antioxidant effect. Bioassay guided fractionation of MeOH extract affforded active EtOAc and BuOH fracons. The most active EtOAc fraction was repeatedly chromatographed over silica and Sephadex LH-20 to afford six flavonoid compounds. Studies on the antioxidant activity of these constituents show that quercetin was the most active of these compounds. Luteolin and kaempherol are also active, These results suggested that the antioxidant activity of leaves of Angelica gigas may be due to flavonoid components. All the compounds were identified by spectroscopic methods and are the first report from leaves of Angelica gigas Nakai.

[PD2-16] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

New Bioactive Furanosesterterpenes from a Dictyoceratid Sponge

Liu YH°, Jung JH, Im KS, Bae BH, Hong JK, Alam N

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

Five new and two known furanosesterterpenes were isolated from unidentifed Dictyoceratid sponge by bioactivity guided fractionation.These compounds showed a significant toxicity to brine shrimp larvae.The gross structures were established by spectroscopic methods, the absolute stereochemistry were not determined.

[PD2-17] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Cytotoxic Constituents from Notopterygium incisum

Nam Nguyen-Hai°, Huong Ha-Thi-Thanh, Kim Hwan-Mook* and Ahn Byung-Zun

College of Pharmacy, Chungnam National University, Taejon 305-764, Korea; *Korea Research Institute of Bioscience and Biotechnology, KIST, Taejon 305-600, Korea

Notopterygium incisum is a perennial herb growing widely in Asian countries. In the search for novel antitumor agents from Vietnamese medicinal plants we found that the methanol (MeOH) extract of N. incisum showed a strong cytotoxicity against B16 murine melanoma cell line. The MeOH extract was sequentially fractionated against ethyl acetate (EA) and butanol (BuOH). Subsequent bioassay revealed the antitumor cytotoxicity was almost located in the EA fraction. Bioassay-guided fractionation and isolation afforded three furanocoumarins including bergamottin, isoimperatorin, notopterol and one polyacetylenic compound (falcarindiol) together with one phenylpropanoid (caffeic acid methyl ester) and one triterpenoid (pregnenolone). This is the first report on the presence of caffeic acid methyl ester from N. incisum. All isolates were evaluated for cytotoxic activity against a small panel of cancer cell lines including B16 (murine melanoma), P388 (murine lymphocytic leukemia), A549 (human lung carcinoma), and SK-OV-3 (human ovarian cancer). It was found that all furanocoumarins and pregnenolone were inactive. Falcarindiol, which had been found to be a cytotoxic compound previously, showed a significant cytotoxic activity in all tested cell lines. It is noteworthy that caffeic acid methyl ester exhibited a significant cytotoxicity profile. Its cytotoxicity was higher than that of 5-FU and comparable to the cytotoxicity of etoposide but lower