The methanolic extract of the underground part of *Angelica gigas* Nakai (Umbelliferae) exhibited the significant inhibitory activity on the acetylcholinesterase (AChE). Bioactivity-guided fractionations of the methanolic extract using AChE inhibitory activity as the parameter screened led to the isolations and identifications of one new coumarin (12) and eleven known coumarins, decursinol (1), marmesin (2), xanthotoxin (3), isoimperatorin (4), xanthyletin (5) 7-methoxy-5-prenyloxycoumarin (6), decursin (7), 7-demethylsuberosin (8), umbelliferone (9), and 7-hydroxy-6-(2-(R)-hydroxy-3-methylbut-3-enyl) coumarin (10) and nodakenin (11). Among these coumarins, five (1-4, 11) were found to be active in the inhibition of AChE. Based on their inhibitory activities on AChE, the relationships between structures and activities were studied.

[PD2-21] [10/20/2000 (Fri) 11:30 - 12:30 / [Hall B]]

A Saponin Codonoposide with a New Sapogenin from Codonopsis lanceolata

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Roots of Codonopsis lanceolata have been used as tonics in the Korean traditional medicine. In a course of isolating saponins from this crude drug, a new saponin named codonoposide (1) was isolated by phytochemical process. The structure of 1 was established as 3-O-[beta-D-xylopyranosyl (1-3)-beta-D-glucopyranosyl]-3beta,16alpha,24-trihydroxyolean-28-oic acid 28-O-[beta-D-xylopyranosyl(1-3)-alpha-L-rhamnopyranosyl(1-2)-alpha-L-galactopyranosyl] ester A sapogenin codonopogenin of 1 was found for the first time as a glycoside state from a natural source. The structure of 1 was determined based on 2D-NMR techniques and chemical methods.

[PD2-22] [10/20/2000 (Fri) 11:30 - 12:30 / [Hall B]]

Lignans from the roots of Acanthopanax chiisanensis

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The roots, stems and leaves of Acanthopanax chiisanensis have been used as an anti-rheumatic, an anti-inflammatory and a tonic in Chinese medicine. In a search for the chemical constituents from the roots of this plant, five lignans were isolated from the chloroform fraction by the repeated column chromatography eluting with hexane-ethylacetate gradient solvents and their chemical structures were elucidated as sesamin, helioxanthin, savinin, taiwanin C and cis-dibenzylbutyrolactone lignan on the basis of physico-chemical and spectral data. Among them, helioxanthin, taiwanin C and cis-dibenzylbutyrolactone lignan are first isolated from this plant.

[PD2-23] [10/20/2000 (Fri) 11:30 - 12:30 / [Hall B]]

A New Inhibitor of Nitric Oxide Synthase Expression from Tussilgo farfara

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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 amount of NO formed by i-NOS was determined by using Griess reagent in the form of NO_2^-. From the activity guided fractionation of the extract of *Tussilago farfara*, a new bisabolone type sesquiterpene was purified as an active principle. The structure was established to be 1,5 bisacetoxy-8- angeloyloxy-3 ,4 - epoxy-bisabola-7(14),10-dien-2-one based on spectral analysis of NMR, IR and Mass. This compound inhibited the production of NO with IC_{50} values (the concentration required inhibiting the production of NO by 50%) of 8.9 μM, and this activity was confirmed as resulting from the inhibition of i-NOS expression in LPS-treated macrophages.

[PD2-24] [10/20/2000 (Fri) 11:30 - 12:30 / [Hall B]]

Neuroprotective constituents from the rhizomes of Cnidium officinale

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The present study evaluated neuroprotective effects of the constituents from the rhizomes of *Cnidium officinale* M. (Umbelliferae). The crude methanol extract of the *C. officinale* inhibited the NMDA-induced excitotoxic neuronal death in primary cultured rat cortical cells (IC_{50} = 188.3 ug/ml). The inhibition of the Glu-induced neurotoxicity by the extract was less potent (IC_{50} = 446.7 ug/ml), implying the involvement of NMDA receptors in the neuroprotective action. The methanol extract was subsequently fractionated with dichloromethane, ethylacetate, and water. The dichloromethane and ethylacetate fraction dramatically protected cultured neurons from the NMDA-induced toxicity, with the IC_{50} values of 37.7 ug/ml and 32.9 ug/ml, respectively. Three components (CO-5-G, CO-6-A, and CO-7-B) were successfully isolated from the dichloromethane fraction and one (CO-12-A) from the ethylacetate fraction by the activity-guided fractionation. Their structures were elucidated by the physicochemical and spectral data such as UV, IR, NMR and MS. Here, we report isolation, purification, structure elucidation of isolated compounds, and their neuroprotective activities

[PD2-25] [10/20/2000 (Fri) 11:30 - 12:30 / [Hall B]]

New diarylheptanoids from the stems of Capinus cordata

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Capinus cordata Blume (Betulaceae) is a deciduous shrub and widely distributed in Korea, Japan and China. The genus Carpinus is known to contain numerous diarylheptanoids as well as taninns. During our search for antiviral compounds from natural products, a crude extract of the stems of C. cordata was found to potently inhibit HIV-1 integrase. By means of bioassay-directed chromatographic fractionation, two new diarylheptanoids, CC5A (1) and CC3Bb (2), and the known casuarinondiol (3) together with five known tannis, (+)-catechin (4), methyl gallate (5), glucopyranosyl 3-O-β-D-methyl gallate (6), glucopyranosyl 4-O-β-D-methyl gallate (7) and methyl gallate 3-O-β-D-(6'-O-galloyl)-glucopyranoside (8) were isolated. Among isolated compounds, 8 showed strong inhibitory activity against HIV-1 integrase in our assay system. We