

(Leguminosae), which is a perennial shrub widely distributed throughout China (called "Zao Jiao Ci") and in Gyeongju city area in Korea (called "Jo Gak Ja") and has been used in traditional medicine for the treatment of swelling, suppuration, carbuncle and skin diseases, led to the isolation of one triterpenoid and four steroids, which were identified as D:C-friedours-7-en-3-one (1), stigmastane-3,6-dione (2), β -sitosterol (3), stigmasterol (4), and stigmast-4-en-3,6-dione (5). Triterpenoid 1 was found for the first time in the natural sources and steroids 2-5 were isolated first from this plant. Stigmasterol showed the most active antimutagenic property examined in a plate incorporation assay against the mutagens, MNNG and NQO using the test strain E. coli PQ37 (SOS chromotest) and against mutagens, NPD and NaN_3 using Salmonella typhimurium test strains TA98 and TA100 (Ames test). Some NMR data of steroids obtained have to be revised by 2D-NMR methods..

[PD2-49] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Neuroprotective effects of Hexane fraction of M61 on Delayed Neuronal Death after Transient global Ischemia in Gerbil Hippocampus

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Several lines of recent evidences have shown that several pro-inflammatory genes or mediators, such as inducible nitric oxide synthase (iNOS) are strongly expressed in the ischemic brain. Inflammation is now recognized as a significant contributing mechanism in cerebral ischemia because anti-inflammatory compounds or inhibitors of iNOS have been proven to reduce ischemic brain damage. In iNOS assay, hexane fraction of M61 inhibited NO (iNOS IC₅₀, 0.7 μ g/ml). In vivo study was carried out to evaluate neuroprotective effect of hexane fraction of M61 after transient global ischemia using Mongolian gerbil ischemia model. The morphological study was performed 7 days after ischemia or sham-operation. Histopathological evaluation of delayed neuronal death (DND) was performed by microtubule associated protein 2 (MAP2) as a marker protein in dendrites. In addition, the effects of hexane fraction of M61 on the apoptosis in the hippocampal CA1 region of gerbils following transient global ischemia were investigated via immunohistochemistry for caspase-3 and terminal deoxynucleotidyl transferase-mediated dUTP nick end labeling (TUNEL) assay. Enhanced TUNEL, and caspase-3 positivities were detected in the hippocampal CA1 region in the ischemic gerbils. Hexane fraction of M61 treatment suppressed the ischemia-induced increment in the number of TUNEL-, and caspase-3-positive cells. These results suggest that hexane fraction of M61 treatment alleviates ischemia-induced apoptosis and may aid in the recovery following ischemic cerebral injury.

[PD2-50] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Protoberberine alkaloids from the rhizome of Coptis japonica Makino

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As part of our program to isolate bioactive compounds from korean natural sources, we have screened traditional medicinal plants to cytotoxicity on human tumor cells. Of them, the MeOH extract from rhizome of Coptis japonica Makino was found to be active against five cultured human tumor cell lines. So, the MeOH extract was subjected to successive solvent partitioning to give n-hexane, chloroform and BuOH. The activity was concentrated into the chloroform extract. The extract was chromatographed on a silica gel column and resulted in the isolation 5 alkaloids. Their structures were determined by physicochemical and spectroscopic methods. The bioactivity study of the isolated compounds are under going.

[PD2-51] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Cytotoxic Activity of StyraX japonica S. et Z.

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The genus *Styrax* (Styracaceae) is different from other genera of this family due to the production of resinous material, usually secreted when the barks and trunks are injured by sharp objects. This resin, in the past considered a miraculous remedy in several parts of Asia and America, has been used in traditional medicine to treat inflammatory diseases. The CH₂Cl₂ fraction of *Styrax japonica* showed significant cytotoxic activities by SRB method against five human tumor cell lines (A549, HCT-15, MES-SA, SK-OV-3, and SK-MEL-2). We isolated four known pentacyclic triterpenoids by bio-activity guided fractionation and identified as oleanolic aldehyde acetate (1), euphoringinol (2), erythrodiol-3-acetate (3), and anhydrosophoradiol (4). Compounds 1-4 were isolated from *S. japonica* for the first time. The triterpenoids were identified by comparison with spectroscopic data. And we also were assayed for cytotoxic activities of compounds 1-4.

[PD2-52] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Platelet Anti-aggregating Triterpene and Sterol Constituents from the Leaves of *Acanthopanax senticosus*

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From methanol extract of *Acanthopanax senticosus*, six platelet anti-aggregating compounds, chiisanogenin (1), chiisanoside (2), ursolic acid (3), oleanolic acid (4), b-sitosterol (5) and daucosterol (6) were isolated. All of the isolated compounds showed dose-dependent inhibitory activities to rat platelet aggregation induced by all the agonist employed. Compound 1 showed about 50 folds higher potency than acetylsalicylic acid (ASA) on U46619 induced platelet aggregation (IC₅₀: 6.21 μM) and 10 ~ 20 folds higher effect than ASA on epinephrine and arachidonic acid (AA) induced aggregation (IC₅₀: 2.50 and 4.81 μM, respectively). Compounds 5 and 6 were 2 ~ 6 folds more inhibitory than ASA on collagen (IC₅₀: 195 and 114 μM respectively) and U46619 (IC₅₀: 170 and 56.1 μM respectively) induced aggregation.

[PD2-53] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Cholinesterase-inhibitory Farnesylacetone Derivatives from the Brown Alga *Sargassum sagamianum*

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In continuing search for bioactive compounds from Korean marine algae, we found cholinesterase-inhibitory activity in the methanolic extract of brown alga *Sargassum sagamianum*. After partitioning between CHCl₃ and 30% MeOH, the former layer was purified by a series of ODS flash, silica column, gel-filtration on Sephadex LH-20, and HPLC to give two farnesylacetone derivatives. Their structures were identified by comparison with the literature data. Compounds 1 and 2 showed moderate acetylcholinesterase and butyrylcholinesterase inhibitory activities with IC₅₀ values of 65.0~48.0 μM and 34.0~23.0 μM, respectively. Interestingly, farnesylacetones have different skeletons from the known cholinesterase inhibitors such as tacrine, physostigmine, huperzine A, donepezil and tolserine.

[PD2-54] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Melanin Biosynthesis Inhibitors from the Tubers of *Gastrodia elata*

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