

of 40 µg/ml. Activity-guided purification of *Populus maximowiczii* resulted in two acyl phenol glucosides as active components. Their structures were elucidated as salicortin (1) and salicortin-6'-benzoate (2) by the spectroscopic analysis. Salicortin inhibited the production of NO with IC₅₀ values (the concentration required inhibiting the production of NO by 50%) of 15 µM. In Western blot assay, they also inhibited the expression of inducible nitric oxide synthase (iNOS). These new inhibitors of iNOS expression may have potential in the treatment of endotoxemia and inflammation accompanied by the overproduction of NO.

[PD2-46] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Quantitative analysis of 5-hydroxymethyl-2-furaldehyde (5-HMF) in the commercial *Rehmanniae Radix Preparata*

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Rehmanniae Radix Preparata attributes good blood circulation and it has been used for the treatment of dizziness, men's sterility, excessive loss of blood and weakness. On the quality control of the commercial *Rehmanniae Radix Preparata*, quantitative determination of 5-hydroxymethyl-2-furaldehyde (5-HMF) using HPLC method has been conducted. Quantitative analysis of 5-HMF in *Rehmanniae Radix Preparata* showered average 0.121±0.063% in 14 samples collected throughout the regions of Korea. Contents of loss on drying, residue on ignition and residue on acid insoluble ighnition showered average 14.084±2.804%, 3.415±0.790% and 0.807±0.474% respectively.

[PD2-47] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Preparation of Alginate-Chitosan Microcapsules and Enteric Coated Granules of Mistletoe Lectin for Oral Administration

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The aqueous extract of European mistletoe (*Viscum album*, L.) has been used in cancer therapy. The purified mistletoe lectins, main components of mistletoe, have demonstrated cytotoxic and immune-system-stimulating activities. Korean mistletoe (*Viscum album* L. *coloratum*), a subspecies of European mistletoe, has also been reported to possess anticancer and immunological activities. A galactose- and N-acetyl-D-galactosamine-specific lectin (*Viscum album* L. *coloratum* agglutinin, VCA) with Mr 60 kDa was isolated from Korean mistletoe. Mistletoe preparations have been given subcutaneously due to the low stability of lectin in the gastrointestinal (GI) tract. In the present study, we investigated the possibility of alginate-chitosan microcapsules as a tool for oral delivery of mistletoe lectin. In addition, our strategy has been to develop a system composed of stabilizing cores (granules), which contain mistletoe lectin, extract or powder, coated by a biodegradable polymer wall. Our results indicated that successful incorporation of VCA into alginate-chitosan microcapsules has been achieved and that the alginate-chitosan microcapsule protected the VCA from degradation at acidic pH values. And coating the VCA with polyacrylic polymers, Eudragit, produced outstanding results with ideal release profiles and only minimal losses of cytotoxicity after manufacturing step. The granules prepared with extract or whole plant produced the best results due to the stability in the extract or whole plant during manufacturing process.

[PD2-48] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

New Components from the Thorns of *Gleditsia sinensis* and Their Antimutagenic Activities

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Antimutagenic activity-guided fractionation of an extract prepared from the thorns of *Gleditsia sinensis* Lam.

(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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