Belamcandae Rhizoma

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The present study was carried out to clarify whether isoflavonoids isolated from Belamcandae Rhizoma (Iridaceae) inhibit inflammation and angiogenesis by the experimental methods in vitro and in vivo. Among the isolated isoflavonoids, such as irigenin, irisflorentine, and iristectorene B inhibited nitric oxide (NO) production, as measured by nitrite formation at 3-30 μM. Also these compounds reduced cyclooxygenase-2 (COX-2) and inducible nitric oxide synthase (iNOS) enzyme expression in a concentration dependent manner, when measured by western blotting, at 3-30 μM. Irigenin, irisflorentine and iristectorene B decreased angiogenesis of chick embryos in the chorioallantoic membrane assay. These compounds also reduced the proliferation of calf pulmonary arterial endothelial (CPAE) cells and found to possess relatively weak gelatinase/collagenase inhibitory activity in vitro. These compounds, when administered subcutaneously at the dose of 30 mg/kg for 20 days to mice implanted with murine Lewis lung carcinoma (LLC), caused a significant inhibition of tumor volume. Therefore, antiangiogenic activities of isoflavonoids from Belamcandae Rhizoma might be due to antiproliferative activities under inhibition the induction of COX-2 and iNOS enzyme.

[PD2-44] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Antioxidant activity of flavonoid compounds from Cudrania tricuspidata Leaves

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Cudrania tricuspidata have been used for anti-inflammatory, anti- hepatotoxic, anti-hypertensive and anti-diabetic activities. In this study, in order to investigate the efficacy of antioxidant activity, the bio-activity guided fraction and isolation of physiologically active substance were performed. H_2O, 30%, 60%, 100% MeOH and acetone fractions were examined antioxidant activity by DPPH method. It was revealed that 30%, 60%, 100% MeOH frations have significantly antioxidant activity. From 30% MeOH fraction, two dihydro flavonoid glycosides (dihydroquercetin 7-O-glucoside, dihydrokaempferol 7-O-glucoside) were isolated and 60% MeOH fraction, six flavonoid glycosides (quercetin 3-O-rutinose, quercetin 3-O-glucoside, quercetin 7-O-glucoside, kaempferol 3-O-rutinose, kaempferol 3-O-glucoside, kaempferol 7-O-glucoside) were isolated. To investigate the antioxidant activities of each compounds, we were measured radical scavening activity with DPPH method and anti-lipid peroxidative efficacy on low density lipoprotein(LDL) with TBARS assay.

[PD2-45] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Two acyl phenol glucosides as Inhibitors of iNOS from Popolus davidiana in LPS-activated macrophages

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Nitric oxide (NO) produced in large amounts by inducible nitric oxide synthase (iNOS) is known to be responsible for the vasodilation and hypotension observed in septic shock and inflammation. Inhibitors of iNOS, thus, may be useful candidate for the treatment of inflammatory diseases accompanied by the overproduction of NO. We prepared alcoholic extracts of woody plants and screened the inhibitory activity of NO production in lipopolysaccharide (LPS)-activated macrophages after the treatment of these extracts. Among 83 kinds of plant extracts, 23 kinds of extracts showed potent inhibitory activity of NO production above 60% at the concentration of 80 μg/ml. Some of potent extracts showed dose dependent inhibition of NO production of LPS-activated macrophages at the concentration of 80, 40, 20 μg/ml. Especially, Artemisia iwayomogi, Machilus thunbergii, Populus davidiana and Populus maximowiczii showed the most potent inhibition above 70% at the concentration

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. Salicortine inhibited the production of NO with IC_{50} 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 oxdie 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 ignition 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.