effect (EC_{50} ; 23.9 μM) which is comparable to L-ascorbic acid.

[PD2-15] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Phenolic Glycosides from the Leaves of Ternstroemia japonica

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Ternstroemia japonica (Theaceae) is widely distributed in Korea, Japan, Taiwan and China. The tree is a useful source of lumber, dye and horticulture. Its fruits have been used as folk medicine in Japan for the treatment of chest pain or numbness. Previously, we have isolated saponins and jacaranone derivatives from the fruits. In our continuous study on the same plant, the leaves of Ternstroemia japonica were extracted with MeOH and the MeOH extract was fractionated with solvents. The n-BuOH soluble fraction was separated by repeated column chromatographies on silica gel and Sephadex LH-20, and further purified by reversed phase HPLC. As a result, four flavonoids (1-4) and three new diphenyl glucosides (5-7) were isolated, together with a known phenyl glucoside (8) . The structures were established on the basis of spectral analysis.

[PD2-16] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Inhibitory effects of pinosylvin on prostaglandin E_2 and nitric oxide production in lipopolysaccharide-stimulated mouse macrophage cells

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The inhibitors of prostaglandin biosynthesis and nitric oxide production by corresponding inducible isozyme have been considered as potential anti-inflammatory and cancer chemopreventive agents. In our continuous search for cancer chemopreventive agents from natural products, we have evaluated the inhibitory potential of PGE_2 and NO production in lipopolysaccharide (LPS)-induced mouse macrophage RAW 264.7 cells. As a result, pinosylvin (3,5-dihydroxy-trans-stilbene), a stilbenoid, mainly found from the heartwood and leaves of the Pinus sylvestris, showed potential inhibitory activity of LPS-induced PGE_2 and NO production in a dose-dependent manner. Pinosylvin also suppressed the LPS-induced iNOS protein expression. Further study revealed that pinosylvin exhibited antioxidant activity by the DPPH free radical scavenging potential and inhibitory effect of xanthine oxidase activity. In addition, pinosylvin inhibited COX-2 overexpressed human colon cancer cell (HT-29) growth in a time- and dose-dependent manner. These findings suggest that pinosylvin might be a promising candidate for developing cancer chemopreventive agent .

[PD2-17] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Lignans from the Stem Barks of Kalopanax septemlobus

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As a part of an ongoing collaborative program to discover novel bioactive components of plant origin, the stem barks of Kalopanax septemlobus were extracted with MeOH, and successively partitioned with CH_2Cl_2, EtOAc, BuOH and water. Repeated column chromatographic separation of the CH_2Cl_2 fraction resulted in the isolation of four compounds. Their structures were identified as vladinol E (1), (-)-simulanol {4-[3-hydroxymethyl-5-((E)-3-hydroxypropenyl)-7-methoxy-2,3-dihydrobenzofuran-2-yl]-2,6-dimethoxy-phenol} (2), vladinol F (3), and (±)-secoisolariciresinol (4). This is the first report on the isolation of these compounds from Kalopanax species.

[PD2-18] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

iNOS inhibitory activity of brazilin from Caesalpinia sappan

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Two phenolic flavonoids were isolated from the traditional medicine of Eastern Asia, Caesalpinia sappan L (Leguminosae). Brazilin (1) showed a significant inhibitory activity against inducible Nitric Oxide Synthase (iNOS) in lipopolysaccharides (LPS)-induced macrophage RAW 264.7 cells with an IC_{50} value of 1.68 mg/ml, which is more potent than the positive control, L-N^6-(1-iminoethyl)lysine (IC_{50} 3.49 mM). On the other hand, caesalpine J (2) was found to be inactive in the present iNOS assay system despite of their structural similarities. This result suggests that brazilin (1) may be a potential candidate to treat human diseases associated with iNOS such as inflammation, ischemia, and aging.

[PD2-19] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

A New Benzofuran from the Stem-bark of Styrax japonica

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Styrax japonica Sieb. et Zucc. (Styracaceae) is a deciduous tree growing in Korea, Japan, and China. The pericarps of this plant have been used as a folk medicine for treatment of cough. Jegosaponins, deacyl jegosaponins and benzofurans have been reported from the fruits and seeds of this plant, and these compounds have been shown antisweet and cytotoxic activities. As a part of a research aimed at the discovery of biological active compounds from plant sources, we have studied a chemical constituent of the stem-bark of S. japonica. The stem-bark was extracted with MeOH. The MeOH extract was suspended in H_2O and extracted with hexane and EtOAc. The resulting H_2O solution was further fractionated on Diaion HP-20 with H_2O, 50% MeOH and MeOH, successively. The MeOH-soluble fraction was chromatographed on a column of reverse phase C-18 to yield three compounds (1-3). The structures of compounds were determined as 5-(3"-hydroxypropyl)-7-methoxy-2-(3',4'-dimethoxyphenyl)-benzofuran 3"-O-[β-D-xylopyranosyl-(1→2)-β-D-glucopyranoside] (1), egonol (2) and egonol 3"-O-[β-D-xylopyranosyl-(1→2)-β-D-glucopyranoside] (3) by chemical and spectroscopic means. Among these, compound 1 was the first to be reported from natural sources.

[PD2-20] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

The Neuroprotective Activity Of Lignans Isolated From Machilus thunbergii

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The CH_2Cl_2 fraction of the bark of Machilus thunbergii Sieb. et Zucc. (Lauraceae) significantly protected primary cultures of rat cortical cells exposed to the excitotoxic amino acid, L-glutamate. Several lignans including (-)-isoguaiacin, meso-dihydroguaiaretic acid, machilin A, (+)-galbelgin, licarin A, (-)-sesamin, and (+)-guaiacin were isolated from the CH_2Cl_2 fraction using by bioactivity-guided isolation techniques. Among these lignans, (-)-isoguaiacin, meso-dihydroguaiaretic acid, licarin A and (+)-guaiacin had significant neuroprotective activities against glutamate-induced toxicity in primary cultures of rat cortical cells at concentration ranging from 0.1 μM to 10.0 μM. These lignans significantly reduced the calcium influx that routinely accompanies glutamate-induced neurotoxicity. To exert neuroprotective activity, they should have both methoxy group and hydroxy group in benzene ring.

[PD2-21] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Platycodin D Induced NF-κB Activation and Apoptosis in Immortalized Keratinocytes

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