The bioassay-guided fractionation of the methylene chloride soluble portion of a methanol extract of Gastrodia elata tubers led to the isolation of a new furfural, 5-(4-hydroxy-benzyloxymethyl)-furan-2-carbaldehyde (2), together with four known compounds (1, 3-5), which exhibited potent inhibitory activity at the concentration of 25 μg/ml on melanin biosynthesis in cultured B-16 mouse melanoma cells.

[PD2-55] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

The antioxidative compounds of the Aster tataricus

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The Aster tataricus is a chinese traditional medicine called "Ziwan" which has an expectorative and remediable cough action. The anti-oxidant activities of A. tataricus were investigated. The MeOH extract of A. tataricus showed strong anti-oxidant activity in the NBT(nitroblue tetrazolium) method system, and thus fractionated with several solvents in to the EtOAc, n-BuOH, CH_2Cl_2, H_2O fraction. The EtOAc soluble fraction exhibiting strong anti-oxidant activity was further purified by repeated silica gel and sephadex LH-20 column chomatography. Three compounds were isolated from the EtOAc fraction by the activity-oriented purification procedure. Their structures were determind as quercetin, kaempferol, kaempferol 3-O-glucoside, respectively, on the basis of spectral data. The antioxidative compounds of the EtOAc fraction of A. tataricus is under study.

[PD3-1] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

The compostions of essential oils from Thymus species and their antifungal activities

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To develop useful antifungal agents from essential oils in Korean plant resources, the activities of Thymus quinquecostatus and T. quinquecostatus var. japonica were evaluated against ten pathogenic fungi. Their results were compared with those of T. vulgaris, which is native to Europe.The essential oils of the tested Thymus species were obtained by steam distillation using a simultaneous steam distillation-extraction apparatus. The above ground parts of plants cultivated in the herbal garden of Duksung Women"s University were used. The composition of the essential oils were analyzed and compared by GC-MS.The antifungal activity of the essential oil fraction of Thymus species and thymol, the main component of this oil, were investigated against Aspergillus niger, A. flavus, Trichoderma viride, Candida albicans, C. utilis, C. tropicalis, Cryptococcus neoformans, Trichosporon mucoides, Trychophyton tonsurans, and Blastoschizomyces capitatus. The MICs and the growth inhibition against the fungi was evaluated by broth dilution method and disk diffusion test. Additionally, the combination effects of the essential oils with synthetic antibiotics were estimated.

[PD3-2] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Inhibitory effects of Saiko-ka-Ryukotsu-Borei-To on the migration and proliferation of vascular smooth muscle cell and suppression of carotid intimal thickness after balloon injury in rats

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Objectives:We have reported that oral administration of Saiko-ka-Ryukotsu-Borei-To (SRB), a traditional

Chinese formulation, inhibited the intimal thickening in carotid artery after balloon injury in cholesterol-fed rats. To elucidate its mechanism, the effects of SRB on migration and proliferation of vascular smooth muscle cell (VSMC) were examined in vivo and in vitro.Methods: < In vivo-study> Rats were fed on diet containing 1% cholesterol and SRB 3 days before and 4 days after denudation. Simvastatin was used as a positive control. 1) VSMC migration: By immuno-histochemical method, migration index was calculated: (Immuno-positive VSMC in intima) x 100 / (total VSMC in intima). < Ex vivo- and in vitro-study >VSMC (rat thoracic aorta SMC:A7r5) was cultured in DMEM containing 10% FBS. 1) VSMC migration: Modified Boyden chamber method: a) the addition of the serum obtained from cholesterol-fed rats orally administered SRB for 10 days (ex vivo "sero-pharmacology") and b) the direct addition of SRB extract to 10% rat serum (conventional in vitro). 2) VSMC proliferation: MTT colorimetric dye reduction method. 3) Cell cycle: VSMC was incubated in the direct addition of SRB extract and stained with PI in the presence of RNase and then stained cells were analyzed by flow cytometry. Results & Discussion: 1) SRB inhibited VSMC migration from the media to the intima in carotid artery 4 days after injury (in vivo). 2) The serum obtained from rats administered SRB also inhibited VSMC migration (ex vivo). This "sero-pharmacological" effects using SRB-serum on VSMC migration might be closer to the results obtained by in vivo experiments. 3) SRB inhibited VSMC migration and proliferation, and caused at the G_2/M cell cycle arrest (200-800 μg/ml: in vitro). It was found that SRB reduced the intimal thickening by inhibiting VSMC migration and proliferation. These results suggest that SRB may be a promising candidate as a clinical therapeutic strategy in atherosclerosis prevention.

[PD3-3] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

DMNQ S64 exerts antitumor activity on A549 cells via COX-2 inhibition

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We synthesized naphthazarin derivatives from shikonin, a major compound from Lithospermum erythrorhion Sieb et ZUCC. Of derivatives, DMNQ S64, 2- or 6-(1-hydroxyiminoalkyl) effectively showed antitumor activity on A549, human lung cancer cells (IC_{50}= 30 μM). It significantly inhibited prostaglandin E_2(IC_{50}= 10 μM). We also confirmed it selectively downregulated the expression of cyclooxygenase 2(COX-2), while it didn't affect COX-1. The induction of apoptosis by DMNQ S64 is underway.

[PD3-4] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Effects of Houttuynia cordata Thunb on Atherosclerosis and Lipidperoxidation in 2,3,7,8-TCDD-Damaged Rats

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TCDD (2,3,7,8-tetrachlorodibenzo-p-dioxin), one of the notorious toxic environmental pollutants, damages various organs including liver and is regarded as an endocrine disrupter. To investigate the effects of Houttuynia cordata Thunb (HCT) on the biochemical parameters of function, liver and serum of TCDD-treated rats were used. After 7 days from TCDD (1 ㎍/kg) injection, HCT (200 ㎎/kg) was administered into rats intraperitoneally for 4 weeks. The lipidperoxide content was examined by measuring the level of total cholesterol, HDL-cholesterol, LDL-cholesterol, total lipid and triglyceride (TG) in serum, and malondialdehyde (MDA) in liver tissue of rats. Result showed that lipidperoxidation was inhibited in the significant level when 2,3,7,8-TCDD-Damaged rats were treated with HCT.

[PD3-5] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Seasonal Variation of Loganin from Lonicera japonica Thunb.

Chung Sunghyun°, Yim Dongsool, Lee Sookyeon