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Fresh fruit bodies of Ganoderma lucidum, used as a folk medicine and believed to be effective against various diseases, were extracted with 70% ethanol at room temperature. The extract (GL) showed significant anti-angiogenic activity, which was detected using the chick embryo chorioallantoic membrane assay. The in vitro antioxidant activities of GL were evaluated using two different bioassays. GL was able to markedly scavenge the stable free radical 1,1-diphenyl-2-picrylhydrazyl (DPPH), and inhibited lipid peroxidation in a concentration-dependent manner. However, it weakly inhibited xanthine oxidase activity. In addition, GL significantly inhibited LPS-induced NO production in RAW264.7 macrophages.

[PA1-39] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

The inhibitory effect of luteolin-7-O-β-D-glucuronopyranoside on esophagitis and gastritis in rats

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This study was designed to determine anti-inflammatory effects of luteolin-7-O-β-D-glucuronopyranoside (LGC), which were isolated from Salix gilgiana leaves. We investigated inhibitory action of LGC on reflux esophagitis and gastritis in rats. Esophagitis and gastritis was induced by surgical procedure and administration of indomethacin(50 mg/kg), respectively. Intraduodenal administration of LGC inhibited the development of reflux esophagitis and the gastric secretion in dose-dependent manner. Administration of LGC also reduced a significant increase in size of gastric lesions induced by exposure of the gastric mucosa to indomethacin. These results suggest that LGC has the inhibitory action in gastritis and esophagitis model of rats.

[PA1-40] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Pharmacological Effects of Cordyceps militaris

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Dongchunghacho, one of folk medicines, is traditionally believed to be effective against various diseaseas. It includes many different genera such as Cordyceps, Paecilomyces, Torrubiella and Podonectria. Cordyceps militaris is one of well-known species. The 70% ethanolic extract was prepared from two different sources of C. militaris, fruiting bodies with host material (BD) and liquid medium-cultured cells (MI). Anti-angiogenic activity was determined by the chick embryo chorioallantoic membrane assay. Both BD and MI were found to contain strong anti-angiogenic activities. The extracts at the dose of 10 mg showed anti-angiogenic activity comparable to that of retinoic acid (dose, 1 mg), used as a control agent. Anti-angiogenic activities of BD and MI appeared to be dose-dependent. No significant differences were found between the effects of BD and MI. Cordycepin, an inhibitor of RNA synthesis identified in some Dongchunghacho species, showed anti-angiogenic activity. These results might suggest the plausible anti-tumor activity of C. militaris. Other pharmacological actions of C. militaris were examined. The extracts were found to inhibit writhing syndromes in mice induced by acetic acid. The extracts of C.militaris suppressed strongly 2.5% croton oil induced mouse ear edema. The acute toxicity(LD50) of the extracts has been also evaluated.

[PA1-41] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Comparisons of antidiabetic activity between Sopungsungi-won (SP) water extract and 70% ethanol extract in streptozotocin-induced diabetic rats

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Purpose: It is generally accepted the fact that pharmacological activity would be different in terms of the method of extraction. Antidiabetic activities between SP water extract and 70% ethanol extract were compared in streptozotocin (STZ)-induced diabetic rats.
Experimental methods: SP water or ethanol extract, 1 g/kg each, was administered orally 3 days before intraperitoneal injection of STZ (Day 0). Until Day 5, 20 mg/kg of STZ, which is dissolved in 100 mM citrate buffer (pH 4.5), was injected once a day. SP extracts were administered for 3-week period, and plasma glucose level and body weight change were determined periodically. At the end of the treatment, plasma levels of total cholesterol, triglyceride and free fatty acid were investigated. Urinary glucose and albumin excretion levels were also determined at 2 and 3weeks. Kidney hypertrophy and mesangium expansion were compared between groups using PAS staining and immunohistochemical analyses.
Results: SP water- and ethanol extract-treated groups both significantly reduced the plasma glucose levels at 3rd week as compared with the diabetic control group. Water intakes in SP water- and ethanol treated-groups were also improved as compared with the diabetic control group. SP ethanol extract treated group showed more potent kidney hypertrophy protection activity than water extract-treated group. SP ethanol extract treated group also had more urine albumin and glucose lowering activity than water extract treated group.
Taken toghter, we may conclude that SP ethanol extract treated group showed more potent antidiabetic activity in STZ-induced diabetic rats than water extract treated group.

[PA1-42] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Antiangiogenic activities of isoflavonoids isolated from the rhizomes of Belamcanda chinensis

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Many evidences proved the correlation between angiogenesis and tumor growth, therefore, searching for natural or synthetic angiogenic inhibitors as potential anti-cancer drugs has been extensively carried out, and it has recently been reported that COX-2 induces angiogenesis, which is essential for tumor growth. Increased prostaglandin production and enhanced release of angiogenic growth factor by COX-2 may induce neovascularization.
In the previous study, we reported that tectoridin and tectorigenin, two isoflavonoids, isolated from the rhizomes of *Belamcanda chinensis* inhibited PGE_2 production in TPA- or thapsigargin stimulated rat peritoneal macrophages by inhibiting the induction of COX-2 protein.
Based on these results, the present study was carried out to clarify whether tectorigenin and tectoridin, inhibit angiogenesis by experimental method *in vitro* and *in vivo*. As a results, both compounds were found to exhibit a significant antiangiogenic activity when measured by chorioallantoic membrane (CAM) assay and by its effect on the proliferation of calf pulmonary arterial endothelial cells. Both compounds were also found to possess matrix metalloproteinase inhibitory activity *in vitro*. *In vivo*, a matrigel plug assay showed that both compounds suppressed basic fibroblast growth factor (bFGF)-stimulated angiogenesis and lowered the hemoglobin content inside the plug.
From these experimental data, it is suggested that tectorigenin is attributed to be a promising compound for the prevention and/or treatment of angiogenesis.

[PA1-43] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Isolation of Aldose Reductase Inhibitors from the Rhizomes of Belamcanda chinensis

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Aldose reductase, the key enzyme of the polyol pathway, is known to play important roles in the diabetic complication. The inhibitors of aldose reductase, therefore, would be a most promising drug for the