tyrosine catalyzed by mushroom tyrosinase with IC\textsubscript{50} of 16.8 \( \mu \)M and 21.5 \( \mu \)M, respectively. It compared well with kojic acid, a well-known tyrosinase inhibitor, with an IC\textsubscript{50} of 22.4 \( \mu \)M. The inhibitory kinetics, analyzed by a Lineweaver-Burk plot, found rosmarinic acid and its methyl ester to be competitive inhibitors with \( K_i \) of 2.35 \( \times \) 10\textsuperscript{−5} M and 1.52 \( \times \) 10\textsuperscript{−5} M, respectively. In addition, compounds 1 and 2 showed the scavenging activities on DPPH radical, with IC\textsubscript{50} of 4.27 \( \mu \)M and 3.05 \( \mu \)M, respectively. These scavenging effects were more potent than that of L-ascorbic acid (IC\textsubscript{50} = 11.75 \( \mu \)M).

[PD2−50] [ 10/17/2002 (Thr) 09:30 – 12:30 / Hall C ]

Study on antifungal activity of herb oils against Trichophyton spp.

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The antifungal activities of the essential oils from Citrus bergamia, Ciderus atlantica, Cymbopogon citratus, Eucalyptus globulus, Juniperus communis, Lavandula angustifolia, Melaleuca alterinfolia, Pelargonium graveolens, Pogestemon patchouli, Rosmarinus officinalis, Styrax tokinensis, and Thymus vulgaris, which are recommended for the treatment of microbial infections in aromatherapy and complementary medicines, were tested against Trichophyton spp. The activities were measured by broth dilution method and disk diffusion assay. As the results, most of the test oils inhibited growth of T. tonsurans, T. mentagrophytes, T. ferrugineum, and T. rubrum. Especially, the essential oils from C. atlantica, C. citratus, E. globulus, and P. graveolens showed the strongest activity among the tested herb oils showing MICs between <0.09 and 0.39 mg/ml.

[PD2−51] [ 10/17/2002 (Thr) 09:30 – 12:30 / Hall C ]

In vitro Antiinflammatory Activity of the Essential oil Extracted from Chrysanthenum sibiricum in Murine Macrophage RAW 264.7 Cells

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This research was undertaken to find the in vitro anti-inflammatory activity of the essensial oil (CS-oil) extracted from Chrysanthenum sibiricum (Compositae) herbs. We investigated the effects of the CS-oil not only on the formation NO and PGE\textsubscript{2} and TNF-\( \alpha \) but also on inducible nitric oxide synthase and cyclooxygenase-2 (COX-2) in lipopolysaccharide (LPS)‐induced murine macrophage 264.7. The data obtained were consistent with the modulation of iNOS enzyme expression. A similar fashion was also observed when LPS‐induced PGE\textsubscript{2} release and COX-2 expression were tested. The significant inhibitory effects were shown in concentration‐dependent manners. In addition, CS-oil also mildly but significantly reduced the formation of TNF-\( \alpha \). These actions may contribute to the availability of CS-oil as an antiinflammatory essential oil. GC–MS data on the oil led to the finding of 2′-methoxythioanisol, (+)‐camphor, geraniol, citral, thymol, eugenol, \( \beta \)-caryophyllene oxide, \( \beta \)-caryophyllene, \( \beta \)-eudesmol, juniper camphor together with an unknown substance contained more than 3% of the total oil.

[PD2−52] [ 10/17/2002 (Thr) 09:30 – 12:30 / Hall C ]

Antigasttritic and anti-ulcerative constituent from Panax ginseng head and its pharmacological activity

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Head of *Panax ginseng* C. A. Meyer indicates its growth number of years and has been widely used for supplying energy to weaklings or used as vomit. Butanol fraction of *Panax ginseng* head was significantly effective on gastritis and ulcer models in rats, and also had anti-oxidative properties in the previous study. It has been well established that gastric ulcer is induced by imbalance between aggressive factors and protective factors, and the oxidative reaction makes the lesions on gastric mucosal injury severer. Besides, Helicobacter pylori infection is one of the important pathogen recently. Thus the study was performed focused on these properties. For further investigation, the butanol fraction of *Panax ginseng* head was systematically isolated with silica gel open column chromatography by activity-guided isolation with HCl-ethanol-induced gastritis. Two active component were identified to ginsenoside Re and ginsenoside Rb1, however ginsenoside Re was dropped because of its insufficient yield for animal test. Ginsenoside Rb1 drastically reduced gastric damages on the tissue induced by HCl-ethanol, indomethacin, gastric ligature (Shay ulcer) and showed significant increase in mucin secretion, but did not affected gastric secretion. Ginsenoside Rb1 showed significant increase in GSH and activation of SOD. Ginsenoside Rb1 protected gastric tissue against mucosal injury by stimulation of mucin secretion as a protective factor and direct anti-oxidative action on initiated gastric tissue.

**[PD2-53] [ 10/11/2002 (Thu) 09:30 – 12:30 / Hall C ]**

The effect of Cordyceps pruinosa on renal failure rats

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Cordyceps has been used as a tonic for replenishing vital function in Chinese traditional medicines. As an attempt to obtain fundamental data for the kidney function, MeOH Ex. and its hexane, ethyl acetate, butanol and water fractions of cultivated Cordyceps pruinosa on mercuric chloride induced renal failure rats were investigated. Urin volume, blood parameters (urea nitrogen, uric acid, creatinine) and urinary electrolytes content (natrum, potassium, chloride) were determined. MeOH extract and butanol fraction showed diuretic effect.

**[PD2-54] [ 10/17/2002 (Thu) 09:30 – 12:30 / Hall C ]**

The effect of Corni Fructus on renal function

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Cornus officinalis has been used as protective drug for liver and kidney function. In order to evaluate the effect on renal function of Corni Fructus. We measured urine volume, chemical parameters (urea nitrogen, creatinine, uric acid), electrolytes (Na^+^, K^+^, Cl^-) in serum and urine. Furosemide showed significant urine volume, serum and urine parameters, but Corni Fructus showed normal level parameters by dose increasing in rats.

**[PD2-55] [ 10/17/2002 (Thu) 09:30 – 12:30 / Hall C ]**

Synergistic effect of a mixed herbal extract on bone loss in ovariectomized (OVX) rats

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