quaternary protoberberine alkaloid and were observed to exhibit a significant inhibition on the acetylcholinesterase(AChE) with dose-dependent manner. The IC50 value of 1-5 on the inhibition of AChE were calculated as 0.14 ㎍/ml (1), 1.0 ㎍/ml (2), 1.4 ㎍/ml (3) and 0.66 ㎍/ml (4), respectively.

[PD2-30] [04/20/2001 (Fri) 13:30 - 14:30 / Hall 4]

The Structure-Activity Relationship of Hepatoprotective Phenylpropanoids from Underground Part of Scrophularia buergeriana

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We previously reported a new phenylpropanoid ester of rhamnose and six known phenylpropanoids isolated from the roots of *Scrophularia buergeriana* MIQ. (Scrophulariaceae). The present study was conducted to determine that these seven phenylpropanoids including a newly-reported glycoside protect primary cultured rat hepatocytes from the toxicity induced by carbon tetrachloride (CCl_4). Furthermore, the relationship between these isolated compounds and hepatoprotective activity was investigated with eleven structurally related compounds. Among the treated compounds, (*E*)-*p*-methoxycinnamoyl-α-L-rhamnopyranoside ester, (*E*)-*p*-methoxycinanmic acid, and isoferulic acid markedly blocked the release of GPT into the culture medium from the injured heptocytes. From this study, it was deduced that α, β-unsaturated ester moiety in phenypropanoids are very important to exert hepatoprotective activity. Moreover, para-methoxy substituted phenypropanoids showed stronger hepatoprotective activity than unsubstituted or para-hydroxy substituted phenylpropanoids.

[PD2-31] [04/20/2001 (Fri) 13:30 - 14:30 / Hall 4]

Kaikasaponin III, a Potent Antimutagenic Saponin, Isolated from the Flower of Pueraria thunbergiana

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The MeOH extract of Pueraria thunbergiana (Legiminosae) flowers was fractionated to test antimutagenicity by Ames test. EtOAc fraction (1 mg/plate) decreased the number of revertants of Salmonella typhymurium TA100 to 95% against aflatoxin B1 (AFB1). Phytochemical isolation of the EtOAc fraction afforded four isoflavonoids (tectorigenin, glycitein, tectoridin and glycitin) and one saponin (kaikasaponin III). Though the three isolates other than tectoridin showed significant antimutagenicity, the activity of kaikasaponin III was the most potent. Kaikasaponin III (0.5 mg/plate) decreased the number of revertants of S. typhymurium TA100 to 99% against AFB1 but to 75% against MNNG (N-methyl-N'-nitro-N-nitrosoguanidin). This result suggested that kaikasponin III prevents the metabolic activation of AFB1 or scavenge electrophilic intermediate capable of mutation.

[PD2-32] [04/20/2001 (Fri) 13:30 - 14:30 / Hall 4]

Hepatoprotective constituents from the rhizomes of Rhodiola sacra

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Bioassay-guided fractionation of the various solvent extracts of *Rhodiola sacra* furnished two hepatoprotective and two inactive compounds (compounds 1-4) *in vitro*.
The structures of 1-4 are identified as cinnamyl alcohol, kaempferol, daucosterol and salidroside, respectively, by comparison of spectral data with those of literature. Compounds 1 and 2 showed better hepatoprotective effects against tacrine-induced cytotoxicity in Hep G2 cells than silymarin, as a positive control (EC_{50}, 38.6 μg/ml). The EC_{50} values of 1 and 2 are 29.9 and 9.62 μg/ml, respectively.

[PD2-33] [04/20/2001 (Fri) 13:30 - 14:30 / Hall 4]

Antimutagenic activity and cytotoxicity of Rumex acetosa L.

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Antimutagenic compounds act by either inactivating mutagens or interfering in the process of mutagenesis, which lead to their antimutagenicity by reducing the frequency or rate of spontaneous or induced mutation. Antimutagenic agents may prevent cancer because they can either destroy mutagens in or out of body cells or block mutagens which damage DNA and cause mutations in cells. As a part of our continuing search for anticancer agents from natural sources, we have investigated the antimutagenic activities of the total extract of whole plant of *Rumex acetosa* L. (Polygonaceae) and its fractions by Ames test using NPD as a mutagen for *S. typhimurium* TA98 and NaN_3 for *S. typhimurium* TA100.
The most active fraction was a methylene chloride fraction, showing 96.6% antimutagenic activity against NPD and 61.6% activity against NaN_3 at a concentration of 1.0mg per plate. Cytotoxicity of the methanol extract and its fractions against five cultured human tumor cell lines, A549(non small cell lung), SK-OV-3(ovary), SK-MEL-2(melanoma), XF498(central nerve system) and HCT-15(colon) was examined *in vitro*. Among the tested samples, the methylene chloride fraction was most effective, exhibiting IC_{50} values of 13.17, 13.46, 18.73, 18.35 and 17.62μg/ml against above cell lines, respectively. These results suggest that the methylene chloride fraction possesses potent antimutagenic and/or anticancer constituents.

[PD2-34] [04/20/2001 (Fri) 13:30 - 14:30 / Hall 4]

Inhibitory effects of Hydrolyzable tannins on Melanin Biosynthesis in B16 mouse melanoma cell line

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For the utilizing of hydrolyzable tannins in the whitening-effect cosmetics, inhibitory effects of hydrolyzable tannins on melanin biosynthesis in B16 mouse melanoma cell line were determined. These hydrolyzable tannins showed inhibitory effect against tyrosinase previously. Hydrolyzable tannins especially, 2,3-(S)-HHDP-D-glucose and pedunculagin inhibited melanin biosynthesis in a