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Tacrine(THA) is the only drug currently approved for the treatment of Alzheimer's disease. It has been reported that the major side effect of THA is hepatotoxicity. In this study, we tried to find the hepatoprotective natural products on THA's toxicity. A methanolic extract of *P. linteus* is prepared, and this extract has been partitioned with organic solvents of the different polarities to afford n-hexane, dichloromethane, ethylacetate, n-butanol, and aqueous soluble fractions.
The protective effect of this six samples against THA-induced cytotoxicity was determined by MTT assay, and antioxidative effects were estimated by DPPH radical scavenging action and MDA formation by TBA method. THA showed cytotoxicity in the time and dose-dependent manners against Hep G2 cell lines. Among six samples, dichloromethane and ethylacetate fractions exhibited the moderate protective effect on THA-induced cytotoxicity. Silymarin was used as a positive control. These two fractions also showed the moderate effects on DPPH radical scavenging action and MDA formation. It is necessary for isolation of active constituents in these fractions to develop the hepatoprotective agent.

[PD2-37] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

α-Viniferin and Kobophenol A, acetylcholinesterase inhibitors from Caragana chamlague

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In the course of our search for acetylcholinestrase inhibitor from natural product, it was found that a total methanolic extract of *Caragana chamlague* LAM. (Leguminosae) showed significant inhibitory effects on acetylcholinestrase. Further activity-guided fractionation of the extract resulted in the isolation and purification of stilbene oligomers, α-viniferin and kobophenol A. The IC_{50} values of α-viniferin and kobophenol A were 16.64 μM and 115.8 μM, respectively.

[PD2-38] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Microbial Metabolism Studies of Silybin, an Antihepatotoxic Flavonolignan

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Silybin is the major component of silymarin, the active principle isolated from the ripe fruits of *Silybum marianum* (L.) Gaertn. (*Cardus marianus* L.) (Asteraceae), which has considerable therapeutic potential in protecting intact or damaged liver cells.
An important aspect of the development of any drug is the study of its metabolism. Drug metabolism studies have mainly relied on the use of small animal models or *in vitro* enzyme systems. Microorganisms have been successfully used as predictive models for mammalian drug metabolism. A number of microorganisms were screened for their ability to metabolize silybin. *Trichoderma koningii* (KCTC6042) was selected for preparative scale transformation. Scale-up fermentation with *T. koningii* has resulted in the production of two major microbial metabolites.

[PD2-39] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Effects of the Korean Propolis on antibacterial activity and cellular immune functions in mice in vitro

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Antibacterial activity of Korean propolis water extract was studied. In the case of S. aureus(22 strains), E. faecalis(23 strains) and Kl. pneumoniae(24 strains) showed relatively good results as an antimicrobial agent. Extracts of propolis were also evaluated for their capacity to stimulate cellular immune function by peripheral mononuclear cells(PBMC) from normal mice. PBMC isolated on a Ficoll-hypaque density gradient were tested in the absence or presence of varying concentrations of each extract for natural killer(NK) cell activity versus K562 cells and antibody-dependent cellular cytotoxicity(ADCC) against human herpesvirus 6 infected H9 cells. Furthermore, comparison between Korean propolis and American propolis was examined by the same method.

[PD2-40] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Mechanisms of vasorelaxant effect of a pyranocoumarin isolated from Peucedanum japonicum Thunb. in rat thoracic aorta.

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We examined the mechanisms of vasorelaxant effect caused by a pyranocoumarin, (+)-cis-4'-acetyl-3'-angeloylkhellactone(compound 1), one of the bioactive components of the *Peucedanum japonicum* Thunb.. Compound 1(10^{-6} - 10^{-4} M) concentration-dependently relaxed the isolated rat thoracic aorta precontracted with phenylephrine(PE). This vasorelaxant potency was diminished by endothelial removal(by 20%). Pretreatments of L-N^G-nitro arginine and methylene blue(MB) attenuated the vasorelaxant effect of compound 1. But indomethacin did not affect the vasorelaxant potency. These indicate that the vasorelaxant effect of compound 1 was partially endothelium dependent and mediated by nitric oxide and cyclic GMP pathway.
To determine if compound 1's effect was mediated through the activation of some of the receptor known to lead to vascular relaxation. Compound 1 induced vasorelaxation was not affected by atropine, triprolidine and propranolol.
Compound 1 inhibited high potassium(80mM)-induced, calcium-dependent contraction in a concentration-dependent manner. But compound 1 slightly relaxed the rat aorta precontracted with PE in the presence of nifedipine, a blocker of voltage-operated calcium channels. TEA(a nonspecific K^+ channel blocker) did not affect the vasodilatory effect of compound 1 against PE-induced contraction.
Mechanisms of compound 1's vasorelaxant effect were multiple, including endothelium dependence and Ca^{2+} channel blockade.

[PD2-41] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Antilipoperoxidant Activity of Cordyceps staphylinidaecola on CCl4-Induced Hepatotoxicity

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