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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Cordyceps is reputed for its broad biological activities and as a tonic for replenishing vital function in folk medicines.
Lipid peroxidation and oxygen free radical injure are major causes of the developement of atherosclerosis, cancer, liver disease, and the aging process.
This study was carried out to investigate the antilipidperoxidative activity of *Cordyceps staphylinidaecola*.
It was extracted with water. We determined CCl_4-treated liver injured rats and measured liver homogenate MDA by TBARS assay and serum parameters.
As a result, the activity increased by dose dependance.

[PD2-42] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Anti-Lipid Peroxidative Principles of the Stem Bark of Kalopanax pictus Nakai

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Hepatic lipid peroxide contents were examined in bromobenzene-treated rats after the oral administration of MeOH extract of the stem bark Kalopanax pictus, its n-BuOH fraction, EtOAc fraction and an alkali hydrolysate of the n-BuOH fraction and after intraperitoneal administration of hederagenin monodesmosides and bisdesmosides. The hederagenin monodesmosides, kalopanaxsaponin A and sapindoside C, exhibited significant anti-lipid peroxidation effects after intraperitoneal administration with 10-30 mmole/kg, whereas their bisdesmosides exhibited no significant activity. These two saponins were suggested to be contributable to the anti-lipid peroxidation of K. pictus.

[PD2-43] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Anticarcinogenic Effect of the Heartwood of Rhus verniciflua and Its Active Principles

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Many xenobiotic substances are activated via hepatic microsomal enzymes and induce disturbances of DNA strands as well as lipid peroxidation. In our concerning to the elucidation of anticarcinogenic principles from the heartwood of Rhus verniciflua, the anti-lipid peroxidation of the MeOH extract of R. verniciflua heartwood in vivo and antimutagenicity of the MeOH extract and its fractions in vitro were observed. In bromobenzene-treated rats, the MeOH extract inhibited microsomal cytochrome P450 enzymes and activated glutathione S-transferase, and finally it significantly reduced malondialdehyde contents. In Ames test, the addition of 1.0 mg/plate of MeOH extract and EtOAc fraction to Salmonella typhimurium TA100 inhibited the mutagenicity by aflatoxin B1 to a level of the spontaneous group. Column chromatographic isolation of EtOAc fraction yielded five flavonoids. By Ames test of these components, sulfuretin was found to scavenge electrophilic intermediate capable of mutation, whereas fustin was shown to be a direct antimutagen which is not involving in the inhibition of hepatic microsomal enzymes. These results suggest that the extract of R. verniciflua heartwood is a potent anticarcinogen and that its components of sulfuretin and fustin are active