Studies on the effect of long term administration of green tea extract on the memory are limited. The green tea extract (0.2 % and 0.5 %) was administered in place of water for 6 months to senescence-accelerated mouse (SAM) R1 and P8. The changes in the levels of acetylcholine, choline, norepinephrine (NE), dopamine (DA) and serotonin (5-HT) in five forebrain regions (cortex, hippocampus, striatum, cerebellum and midbrain) were examined. Green tea administration in SAM-R1 and SAM-P8 decreased acetylcholine levels significantly in hippocampus, striatum and midbrain, respectively. The changes of DA, NE and 5-HT concentrations in SAM-R1 treated with green tea extract were negligible except the significant increase of 5-HT in the midbrain. In SAM-P8 treated with green tea extract, DA levels in the hippocampus and striatum were significantly decreased but 5-HT contents in cortex and midbrain were significantly increased. These results suggest that the improvement of the learning ability may be linked not to acetylcholine but to aminergic neurotransmitters. (This study was supported by HMP-97-ND-4-0027).

[PA1-16] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3]]

Isolation, chemical structure, and characterization of anti-inflammatory principle from cactus

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Cactus (*Opuntia ficus-indica var. saboten Makino*) has been widely used as folk medicine. It was previously found that the ethanolic extract of cactus showed potent anti-angiogenic action. In the present study, the active principle of anti-angiogenic action was purified from cactus stems by solvent extraction and column chromatoraphy,based on adjuvant-induced chronic inflammation model in mice with chemical and spectroscopic methods, the purified anti-angiogenesis component was identified to be β-sitosterol.

[PA1-17] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3]]

The Effect of Higenamine on Endotoxin-induced Experimental Disseminated Intravascular Coagulation (DIC) in Rats

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Disseminated intravascular coagulation (DIC) is a pathological syndrome which occurs following the uncontrolled activation of clotting factors and fibrinolytic enzymes throughout small blood vessels; fibrin is deposited, platelets and clotting factors are consumed, and fibrin degradation products inhibit fibrin polymeriztion, resulting in tissue necrosis and bleeding.
The indications for DICs include a decrease in the number of platelets in blood, a decrease of fibrinogen level and an increase of fibrin/fibrinogen degradation product (FDP) level in blood, and an extention of prothrombin time (PT) and activated partial thromboplastin time (aPTT). These indices for LPS-induced DIC were improved by the administration of higenamine. Higenamine prevented the decrease of the number of platelets and the concentration of fibrinogen in blood, the increase of FDP level, and the extention of PT and aPTT induced by LPS.
The parameters of multiple organ failure (MOF), such as serum glutamic oxalacetic transaminase (S-GOT), serum glutamic pyruvic transaminase (S-GPT) and blood urea nitrogen (BUN), were also assayed. Higenamine significantly suppressed the increase in S-GOT. The increase in S-GPT and BUN were also suppressed.

The above result are suggestive that higenamine has therapeutic potential for DIC or MOF.

[PA1-18] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3]]

Biological activities of Peptidoglycan (PGGL8) from Ganoderma Lucidum

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The peptidoglycan (PGGL8) were extracted by 8% NaOH from the residue after water fraction of the fruiting bodies of Garnoderma lucidum and aldo the biological activities were investigated. The alkali-extracted peptidoglycan showed antioxidant action through the inhibition of the lipid peroxidation induced by ascorbate/Fe2+ and ADP/Fe3-, NADPH.
The peptidoglycan showed antimicrobial activity on Gram(+) bacteria, especially on Propionebacterium acnes (ATCC 11827,6919) at the concentration of 5 mg/ml in MIC test. Also, the peptidoglycan exhibited immuno-stimulating effect through the release of NO by activation of macrophage against antimicrobials. Meanwhile, the peptidoglycan (500 mg/kg) inhibited 30-50% of capillary permeability induced by acetic acid. And the peptidoglycan inhibited the vasorelaxation induced by acetylcholine and histamine, which were endothelium dependent vasodilator, but did not affect the vasorelaxation induced by isoproterenol, which was endothelium nondependent vasodilator. The peptidoglycan resulted the vasoconstriction in the endothelium disrupted thoracic aorta of rats.
These results would suggest that the alkali-extracted peptidoglycan of Garnoderma lucidum had the skin protective effects through the antioxidant, anti-microbilal and anti-allergic actions.

[PA1-19] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3]]

Cytotoxicity and antimicrobial effects of the methanol extract of Sophora flavescens Ait. (III)

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This study was carried out to evaluate cytotoxicity of the methanolic extract from Sophora flavescens Ait. against L1210 (lymphocytic leukemia) and P388D1 (lymphoid neoplasma) Cells in vitro. We have determined cytotoxicity by MTT (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl-2H-tetrazolium bromide)assay. The order of cytotoxicity of Sophora flavescens Ait. extract against L1210 and P388D1 cells in vitro is as follows : AM > Fr. 5 > Fr. 4 > Fr. 6 > Fr. 7 > Fr. 10 > Fr. 8 > Fr. 3 > Fr. 2 > Fr. 1 > Fr. 9 and AM > Fr. 5 > Fr. 4 > Fr. 10 > Fr. 6 > Fr. 8 > Fr. 2 > Fr. 7 > Fr. 9 > Fr. 3 > Fr. 1. These results suggest that the fraction 5 of the methanolic extracts of Sophora flavescens Ait. may be a valuable choice for the development of antitumor agents.
In order to develop an antimicrobial agent, dried Sophora flavescens Ait. was extracted with methanol, and then antimicrobial activity was investigated. The minimum inhibitory concentration (MIC) of the extracted substance against microorganisms, were also examined. The fraction 6 of the methanolic extract of the roots of S. flavescens showed strong growth inhibition activity against gram-positive bacteria and gram-negative bacterium (MIC, 6.25 - 12.5 μg/ml) such as B. subtilis, S. aureus, M. luteus and P. aeruginosa. Among gram-positive bacteria and gram-negative bacteria tested, S. aureus, B. subtilis and P. aeruginosa were the most susceptible to the extracted