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Nitric oxide (NO) and prostagladins(PGs) produced by inducible nitric oxide synthase(iNOS) and cyclooxygenase(COX-2) are known as inflammatory mediator. Modulation of these enzymes, induced by many stimuli(LPS, IFN-gamma, TNF-alpha, phorbol ester, etc), is a potent strategy as treatment of inflammatory diseases.
Treatment of murine macrophage RAW 264.7 cell line with indole compound(IND-6) markedly reduced lipopolysacchride(LPS) stimulated NO production in a concentration-related manner. In this point of view, we tested the effect of various indole compounds in LPS-stimulated RAW 264.7 murine macrophage cell line. Western blot analysis and RT-PCR showed that IND-6 inhibited of iNOS and COX-2 proteinand mRNA expression through the attenuation of IkappaB-alpha degradation induced by LPS. Moreover, we investigated the effect of this compound on pro-inflammatory cytokine TNF-alpha production.

[PC1-3] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Antioxidative effect of flavonol quercetin and hydrocaffeic acid against a oxidative stress on B16F10 murine melanoma cell of pretreated with hydrogen peroxide

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In this study, we investigated the effect of inhibition of proliferation and antioxidant effect on B16F10 murine melanoma cell. Also, we examined by MTT(3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide) assay and intracellular reactive oxygen intermediate levels and the levels of catalase(CAT), superoxide dismutase (SOD), and glutathione peroxidase(GPX) an adaptive response of oxidative stress on B16F10 murine melanoma cell of pretreated with hydrogen peroxide. Quercetin and hydrocaffeic acid were used 25uM, 50uM, 100uM, 200uM,concentration. From this result, quercerin and hydrocaffeic acid demonstrated a dose-dependent reduction in the effect of inhibition of proliferation and increased enzymic antioxidant levels. It may be useful by reducing or preventing an oxidative stress damage.

[PC1-4] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Inhibitory effects of synthetic isoflavone compounds on IL-5 bioactivity

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Eosinophilic inflammation is the main histological correlate of airway hyperresponsiveness and tissue injury in the pathogenesis of bronchial asthma. Interleukin (IL)-5 appears to be one of main proinflammatory mediators that induce eosinophilic inflammation. Allergic IL-5-deficient mice do not generate eosinophilia in the bone marrow, blood or lung in response to allergen provocation. However, airway instillation of recombinant IL-5 to the allergic IL-5-deficient mice

completely restores allergen-induced eosinophilia. Thus, IL-5 is critically involved in eosinophilia-associated allergic inflammation. To develope novel IL-5 inhibitor with sophoricoside as the lead compound, about 40 kinds of synthetic isoflavone analogs have been prepared. Among them, 5-cyclohexylmethoxy-3-(4-hydroxyphenyl)chromen-4-one and 7-cyclohexylmethoxy-3-(4-hydroxyphenyl)chromen-4-one showed potent inhibitory effect on IL-5 bioactivity with IC50 values of 5-6 uM, comparable with that of sophoricoside. Pharmacophore of the isoflavone analogs to inhibit IL-5 bioactivity seems to require I) planarity between A and C rings, II) existence of phenolic hydroxyl group at 4' position of B ring, and III) introduction of cyclohexylmethoxy group at 5 or 7 position of A ring, which may act as a bulky group for interacting with hydrophobic pocket in putative target.

[PC1-5] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Antioxidant activity of flavonoid, myricetin and (+)-catechin on B16F10 murine melanoma cell in oxidative stress with hydrogen peroxide.

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There are now increasing evidences that free radicals and reactive oxygen species are involved in a variety of pathological events. Flavonoids, a group of polypenolic compounds, are widespread in the human food supply. This study was carried out to investigate the antioxidant activity of these compounds, myriceitn and (+)-catechin on B16F10,murine melanoma cell line in oxidative stress. Oxidative stress was induced by exposure to hydrogen peroxide .In order to investigate the efficacy of antioxidant activity, we measured cell viability, antioxidant enzyme activity[SOD(superoxide dismutase), CAT(catalase), GPX(glutathione peroxidase activity)] and intracellular reactive oxygen intermediate.
The experimental evidence, we show that these flavonoids are increased antioxidant activity level.

[PC1-6] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Characterization of Acharan Sulfate Binding Proteins in Blood Plasma

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Glycosaminolycans (GAGs), such as heparin and heparan sulfate, are highly charged molecules and are of great biological importance. Protein-GAGs interactions play prominent roles in cell-cell recognition and cell growth. Acharan sulfate (AS), isolated from the giant African snail *Achatina fulica*, is a novel member of glycosaminoglycan families. It showed antitumor activity by the inhibition of angiogenesis. In order to find any plasma proteins interacting with AS, it was immobilized to agarose matrix by EDC/diaminodiproplyamine coupling method. The immobilized gel packed in a column was exposed to human plasma. The column was eluted with a stepwise salt gradient (0, 0.3, 0.4, 0.5, 1.0, and 2.0 M NaCl in tris buffer). Two proteins, ceruloplasmin and proapolipopotein, were characterized by SDS-PAGE and MALDI-TOF MS. We speculate that an interaction of two proteins with AS may be important in exhibiting diverse biological activities in the body.