interested recently because epidemiological studies have suggested correlations between the consumption of polyphenol-rich plant foods and the prevention of chronic diseases. Soy is a main source of isoflavonoids which are high dietary intake for the oriental population. In this study, anti-inflammatory action of sophoricoside, an isoflavone glycoside isolated from immature fruits of Sophora japonica (Leguminosae family), has been demonstrated. When administered orally with >100 mg/kg or injected intravenously with >10 mg/kg, sophoricoside showed significant reduction of carrageenin-induced paw edema in mice. Sophoricoside was identified as a selective inhibitor of cyclooxygenase (COX)-2 activity with an IC50 value of 3 uM, but did not show inhibitory effect on synthesis of COX-2 transcript. Furthermore, sophoricoside showed IC50 values of 2 uM on interleukin (IL)-5 bioactivity and 6 uM on IL-6 bioactivity. However, sophoricoside did not inhibit both production of oxygen radicals and bioactivities of IL-1 and tumor necrosis factor. This anti-inflammatory action of sophoricoside was significantly different mode from that of genistein known as a phytoestrogen of soy products. The experimental study has documented an importance of dietary soy isoflavonoids as multifunctional agents beneficial to human health, and will help to clarify protective mechanisms of sophoricoside, an isoflavone glycoside, against inflammatory conditions.

[PC1-10] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Differential inhibitory effects of alpha-viniferin, resveratrol trimer on inflammatory mediators

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Alpha-viniferin was isolated from Carex humilis (Cyperaceae), and showed anti-inflammatory effects on carrageenin or histamine-induced paw edema in mice. To understand mode of the anti-inflammatory action, effects of alpha-viniferin on cyclooxygenase (COX)-2, iNOS, oxygen radicals and proinflammatory cytokines have been analyzed. Alpha-viniferin showed selective inhibitory effect with an IC50 value of 5 uM on COX-2 activity but showed weak inhibitory effect on the synthesis of COX-2 transcript which was identified by RT-PCR. The compound inhibited not only NO production but also iNOS synthesis in LPS-stimulated murine macrophages Raw264.7. Furthermore, alpha-viniferin showed inhibitory effects with IC50 values of 9-10 uM on production of superoxide anions in unopsonized zymosan-stimulated human monocytes and neutrophils. Alpha-viniferin showed inhibitory effects (IC50 value, 19 uM) on IL-6 bioactivity but did not inhibit IL-1 and TNF bioactivity. However, the compound showed inhibitory effect with an IC50 value of 10 uM on TNF release in LPS-stimulated murine macrophages Raw264.7. NF-kB plays an important role on expression of proinflammatory proteins, but the compound seems to show very weak inhibitory effect on NF-kB transactivation.

[PC1-11] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Identification of two lectins containing the same sugar-specificity from Korean mistletoe

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Three mistletoe lectins (ML-I, ML-IIU, ML-IIL) have been identified in Europe based on sugar specificities for galactose(Gal) and N-acetyl galactosamine(GalNAc). Korean mistletoe lectins have been known as mainly ML-II type. In previous results, we suggested that there are two lectins, 64 KDa and 60 KDa, in Korean mistletoe lectin (KML-C).
This paper describes a purification of two isolectins (referred to as KML-IIU, KML-IIL) from Korean mistletoe using immuno-affinity column generated from the KML-IIU-specific monoclonal antibody, biochemical and biological characterization of these proteins. Both lectins have two heterogeneous subunits and have carbohydrate-binding site that is specific for Gal/GalNAc but different in glycosylation, molecular weight and biological properties.
We found that the two lectins have similar amino acid compositions and similar level of affinity for galactose and N-acetylgalactosamine. However these lectins show different cytotoxic effects on various cells and different TNF-alpha inducing effects from macrophage.

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

Inhibition of lipopolysaccharide-induced inflammatory mediators NO, PGs, TNF-α expression by MeOH extract of Kochia scoparia in RAW264.7 cells.

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MeOH extract obtained from the Kochia scoparia (KS) was observed to inhibit tumor necrosis factor-alpha (TNF-alpha), prostaglandins (PGs) and nitric oxide(NO) production in a lipopolysaccharide (LPS)-stimulated murine macrophage cell line, RAW 264.7. These effects of MeOH-KS were based on modulation of iNOS and COX-2 level. Western blot analysis showed that MeOH-KS reduced the iNOS and COX-2 level in LPS activated macrophages, in a dose dependent manner without cNOS and COX-1 protein level. We also investigated RT-PCR to confirm the trancriptional regulation of iNOS and COX-2 mRNA by MeHO-KS.

[PC1-13] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Inhibitory effect of quercetin 3-O-β-(2"-galloyl)-rhamnopyranoside and its building moiety on the production of oxygen radicals in activated murine macrophages Raw264.7

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Reactive oxygen species play an important role in aging, carcinogenesis, and certain neurological disorders of human beings in addition to the host-defensive mechanism of inflammatory response. Murine macrophages Raw264.7 released superoxide anions via NADPH oxidase complex and nitric oxide (NO) via iNOS synthase when the cells were stimulated with unopsonized zymosan binding to complement receptor. Quercetin 3-O-β-(2"-galloyl)-rhamnopyranoside (QGR) showed dose-dependent inhibitory effects of 87% inhibition at 10 uM, 49% at 3 uM and 7% inhibition at 1 uM, and exhibited an IC50 value of 3 uM on the production of superoxide anions. Building moieties of QGR also showed inhibitory effects with IC50 values of 31 uM by quercitrin, 5 uM by quercetin and 22 uM by gallic acid on the unopsonized zymosan-induced production of superoxide anions. Murine macrophages Raw264.7 also released superoxide anions via NADPH oxidase complex when the cells were stimulated with phorbol myristate acetate (PMA) known as an activator of protein kinase C. QGR showed dose-dependent inhibitory effects of 86% inhibition at 30 uM, 67% at 10 uM, 45% at 3 uM and 23% at