[PC1-7] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

The mechanism of the anticancer effect of 2-hydroxycinnamaldehyde in HL-60

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2-Hydroxycinnamaldehyde is an active compound isolated from the Stem Bark of Cinnamomum cassia, a traditional oriental medicinal herb, which has been shown to inhibit tumor cell proliferation. In this study, we investigated the effects of 2-hydroxycinnamaldehyde on the cytotoxicity, induction of apoptosis and the putative pathways of its actions in human promyelocytic leukemia cells (HL-60). Using apoptosis analysis, we show that 2-hydoxycinnamaldehyde is a potent inducer of apoptosis and that it transduces the apoptotic signal via cytochrome c release to the cytosol. ROS production, mitochondrial alteration, and subsequent apoptotic cell death in 2-hydroxycinnamaldehyde treated cells were blocked by the antioxidant N-acetylcystein (NAC). Taken together, our data indicate that 2-hydroxycinnamaldehyde induces the ROS-mediated mitochondrial permeability transition and resultant cytochrome c release. This is the first report on the mechanism of the anticancer effect of 2-hydroxycinnamaldehyde.

[PC1-8] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Hepatoprotective effects and Mechanism of Flavonoids

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Primary cultured rat hepatocytes injured by carbon tetrachloride as a model to screen for hepatoprotective effect. Four flavonoid compounds showed anti-hepatotoxic effect by decrease GPT, LDH activity and MDA level. Also screen for hepatoprotective, anti-oxidative and anti-apoptosis effects of baicalin and baicalein on chang cell treated with t-BHP. Mesured radical detoxifying enzyme, GST and antioxidant enzyme SOD, Catalase activity, GSH level and Cellular glutathion peroxidase activity. And tested that Annexin V binding on chang cell treated with t-BHP for anti- apoptosis effect of baicalin and baicalein.
Flow cytometric analysis of mitochondrial transmembrane potential and Western blot analysis for the release of cytochrom c into cytosol cleavage of Caspase 9, 3 , 8 and Bid. Finaly tested in vivo effects of baicalein on t-BHP-induced Liver damage.

[PC1-9] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Anti-inflammatory action of soy isoflavonoid sophoricoside by inhibition on cyclooxygenase-2 and cytokines

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Polyphenolic compounds including flavonoids are wide spread in the plant kingdom, and

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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