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LDL-Antioxidant activity of 6-hydroxyeugenol from *Spiraea blumei*

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Low density lipoprotein (LDL) is the major cholesterol carrier in the blood stream. Also, LDL oxidation has been proposed as an important step in the formation of atherosclerotic lesion. Thus, protection of LDL from oxidation is needed to prevent or to retard the progression of atherosclerosis.

In this study, 6-hydroxyeugenol was isolated from the methanolic extract of the *Spiraea blumei* and the structure was elucidated by spectroscopic data analysis. We investigated the antioxidant properties of 6-hydroxyeugenol on Cu²⁺-mediated human LDL oxidation, which was monitored by thiobarbituric acid-reactive substance (TBARS) assay, conjugated diene formation, and electrophoretic mobility and fragmentation of apoB using SDS-PAGE. 6-Hydroxyeugenol exhibited potent LDL-antioxidant activity in the TBARS assay with IC₅₀ value of 7.4 μM. Eugenol also exhibited potent LDL-antioxidant activity under the same conditions with an IC₅₀ value of 2.2 μM. Probucol (IC₅₀ = 3.0 μM) was used as a positive control substance in this assay.

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Inhibitory activity of diarylheptanoids on farnesyl protein transferase

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Diarylheptanoids [curcumin (1), demethoxycurcumin (2), bisdemethoxycurcumin (3), bisdimethoxymethylcurcumin (4), and 1,2-dihydrobis(de-O-methyl)curcumin (5)] were isolated from the methanolic extract of *Curcuma longa* L. and a new cyclic diarylheptanoid (6) and a known compound 7 were isolated from fruits of *Alnus japonica* S. Diarylheptanoids (1-3) inhibited farnesyl protein transferase (FPTase) with an IC₅₀ of 29-50 μM. The other compounds very mildly inhibited FPTase, therefore, the inhibitory activity on FPTase very much depends on the structure of diarylheptanoids. The isolated FPTase inhibitors also inhibited the proliferation of ras-transformed cell lines with a GI₅₀ of 8-15 μg/mL.

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A new phlorotannin from the brown alga *Ecklonia stolonifera*

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Ecklonia stolonifera Okamura is a member of the family Laminariaceae, belonging to the order Laminariales. Previously we reported that the methanolic extract of the brown alga *E. stolonifera*

exerts antioxidative activity on 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical. In the course of a continuous study on the active principles of this alga, a new phlorotannin, named eckstolonol (2), was isolated along with the four known phlorotannins i.e. phloroglucinol (1), eckol (3), phlorofucofuroeckol A (4), and dieckol (5), from the EtOAc soluble fraction, which exhibited strong antioxidant activity in the DPPH model system, by silica gel and Sephadex LH-20 column chromatography. These compounds were individually evaluated for scavenging activities on DPPH radical.

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Anti-Oxidative compounds from leaves of *Hovenia dulcis*

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Fruits of *Hovenia dulcis* T. (Rhamnaceae) was called ' jiguja ' in oriental medicine which has been used for diuresis, remove of hangover and leaves has been used for detoxified the alcohol.

In order to investigate the efficacy of antioxidative activity from leaves of *Hovenia dulcis*, the activity guided fraction and isolation of physiologically active substance were performed. Its 20%, 40%, 60%, 80%, 100% MeOH, H₂O, Acetone fractions were examined antioxidative activity by DPPH method and TBARS assay. It was revealed that 40% MeOH fractions has significant antioxidative activity.

Eight phenolic compounds were isolated from 20% ~ 80% MeOH fraction.

To investigate the antioxidative activities of each compound, we were measured radical scavenging activity with DPPH method and anti-lipid peroxidative efficacy on human LDL with TBARS assay.

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Anti inflammatory Activity of Flavonoids from the Seeds of *Astragalus sinicus* Linne

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The seeds of *Astragalus sinicus* grows in Korea have been used for oriental traditional medicine as the remedies for inflammation. Eight flavonoids were isolated from the Seeds of *Astragalus sinicus* and studied its anti-inflammatory activity. Some flavonoid compounds showed significant nitrogen monoxide(NO) production inhibitory activity in IFN- γ , LPS stimulated RAW 264.7 cell. These compounds also showed significant antioxidative activity in DPPH assay. These results suggest that the flavonoids which were isolated from seeds of *Astragalus sinicus* might be developed as a anti-inflammatory agent.

[PD2-31] [04/18/2003 (Fri) 13:30 - 16:30 / Hall P]

Induction of methylchitinase in the adventitious root of *Astragalus* by methyl jasmonate

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