

[PD2-53] [10/19/2001 (Fri) 14:00 – 17:00 / Hall D]

Antioxidant effects of the rhizomes of *Astilbe koreana* on free radical and lipid peroxidation

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In our continuous study on the antioxidant from plants, the MeOH extract from the rhizomes of *Astilbe koreana* showed a strong activity on DPPH radical scavenging assay. The rhizomes of *Astilbe koreana* (Saxifragaceae) and other *Astilbe* species have been used for headache, analgesic and anti-inflammatory drug as substitute for "Shengma". The MeOH extract was partitioned sequentially with hexane, EtOAc, BuOH. And their antioxidant activities against DPPH radicals, superoxide radicals, hydroxyl radicals and lipid peroxidation were evaluated. Especially, EtOAc and BuOH fractions scavenged DPPH radical in a dose-dependent manner with IC₅₀ values of 15.2 ± 1.2 µg/ml and 17.3 ± 1.2 µg/ml, respectively. In the superoxide radical assay, EtOAc and BuOH fractions showed activity with IC₅₀ values of 63.1 ± 11.7 µg/ml and 82.8 ± 7.6 µg/ml, respectively. In the hydroxyl radical assay, the two fractions showed activity with IC₅₀ values of 40.2 ± 4.3 µg/ml and 39.8 ± 4.1 µg/ml, respectively. In the lipid peroxidation assay, the EtOAc fraction exhibited potent activity with IC₅₀ value of 6.4 ± 0.3 µg/ml. The EtOAc fraction exhibited more potent activities than α-tocopherol in all the results.

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Inhibitory effect of eugenol on lipopolysaccharide-activated PGE2 production in macrophage cells

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To elucidate the active principles for cyclooxygenase-2 (COX-2) inhibition from plant extracts, the extract of the cortex of *Eugenia caryophyllata* (Myrtaceae) was studied. The methanol extract showed the potent inhibition of prostaglandin E2 production in lipopolysaccharide (LPS)-activated mouse macrophage RAW 264.7 cells (98.3% inhibition at test concentration of 10 µg/ml). Further, hexane-soluble layer was the most active partition compared to ethyl acetate, n-butanol, and water-soluble parts. By bioassay-guided fractionation of hexane-soluble layer, eugenol was isolated and exhibited a significant suppression of PGE2 production (IC₅₀ = 0.06 µg/ml). Additional studies are underway to explore the effects of eugenol on COX-2 gene and protein expression.

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Inducible Nitric Oxide Synthase Inhibitory Activity of Pseudoguaianolides from the Flowers of *Inula britannica*

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