

A065 Antioxidant activities of the extracts from the leaves of *Ocimum sanctum* L.*R. Supabphol* and *P. Nusuetrong*

Department of Physiology, Faculty of Medicine, Srinakharinwirot University, Sukumvit 23, Bangkok 10110, Thailand.

The powdered leaves of *Ocimum sanctum* L. were extracted by hexane, chloroform, ethanol and water. All of the extracts were tested for antioxidant potency using the 1,1-diphenyl-2-picrylhydrazyl (DPPH) assay. The 50 % inhibition of DPPH was used to interpret the antioxidant effect (1). Hexane and chloroform extracts did not show 50 % inhibition. Ethanol extract showed 50 % inhibition at high concentration, more than 1,400 µg/ml. The best fraction was aqueous extract expressed 50 % inhibition at 324.21 + 29.13 µg/ml. Total antioxidant status was also investigated by the suppression of radical cation ABTS® (2,2'-Azino-di-[3-ethylbenzthiazoline sulphonate]) produced from the reaction of ABTS®, peroxidase and hydrogen peroxide (2). Hexane extract had no antioxidant activity. The total antioxidant activities of chloroform, ethanol and aqueous extracts at 150 µg/ml were 0.47, 0.83 and 1.05 mmol/L, respectively. In the comparison to standard antioxidant, BHT showed 16 times higher antioxidant activity than aqueous extract in both assays. Base on these findings, the leaves of *O. sanctum* should contain the antioxidant constituents with high polarity. The aqueous extract will be useful for further investigation.

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References: 1. Lai, LS. et al. (2001) J Agric Food Chem 469: 963-8. 2. Koracevic, D. et al. (2001) J Clin Pathol 54: 356-61.

A066 Suppressive effects of edible Thai plants on superoxide and nitric oxide generation*Suratwadee Jiwajinda*^a, *Vilai Santisopasri*^b, *Akira Murakami*^c, *Oe-Kyung Kim*^d, *Ha Won Kim*^d and *Hajime Ohigashi*^d

^a Central Laboratory and Greenhouse Complex, Kasetsart University, Kamphaeng Saen, Nakhon Pathom 73140, Thailand. ^bDepartment of Biochemistry, Faculty of Science, Kasetsart University, Chatuchak, Bangkok 10900, Thailand. ^c Department of Biological Science, Faculty of Biology-Oriented Science and Technology, Kinki University, Iwade-Uchita, Wakayama 649-6493, Japan. ^d Division of Food Science and Biotechnology, Graduate School of Agriculture, Kyoto University, Kyoto 606-8502, Japan.

The ethanol extracts from a total of 134 species of edible Thai plants were screened for suppressive effects on superoxide (O₂⁻) production using the xanthine (XA)-xanthine oxidase (XOD) assay system. When tested the extracts at a concentration of 500 µg/ml, 44% and 23% of them inhibited XOD activity and scavenged O₂⁻, respectively. Of those tested species, we have isolated and identified two flavones, oroxylin A and chrysin, and a triterpene carboxylic acid, ursolic acid (UA), as the active constituents from the fruit pods of *Oroxylum indicum* (Bignoniaceae), a traditional vegetable in Thailand. These compounds showed a marked inhibitory effect on the tumor promoter 12-O-tetradecanoylphorbol-13-acetate (TPA)-induced O₂⁻ generation in dimethylsulfoxide (DMSO)-differentiated HL-60 cells. In addition, some plant extracts significantly suppressed O₂⁻ and nitric oxide generation in cellular system. As we have reported earlier that the edible plants in tropical region highly contain promising cancer preventives using the inhibition test of Epstein Barr virus (EBV) activation induced by tumor promoters in Raji cells (1), these results supported us to conclude that the edible Thai plants are a useful source for physiologically active compounds.

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Reference: 1. Murakami, A., Jiwajinda, S., Koshimizu, K. & Ohigashi, H. (1995) Cancer Lett. 95: 139-146.