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## ESTROGENIC ACTIVITIES OF HYDROLYZED AND UNHYDROLYZED EDIBLE PLANT EXTRACTS

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The estrogenic activity of 47 plant extracts was assessed by reporter gene assay using MCF-7 breast cancer cell lines stably transfected with luciferase reporter gene. The estrogenic activity of food extracts was expressed as 17 $\beta$ -estradiol(E2) equivalent concentration(EEQ), the concentration of E2 that resulted in the same relative luciferase unit(RLU) of the food extract of 0.2mg/ml. Samples were extracted by two extraction methods. Aqueous ethanol(80%) was used to extract both glycosides and free phytoestrogens. Aglycones, phytoestrogen forms without any conjugated carbohydrates were prepared by the simultaneous hydrolysis-extraction with 1N HCl in 80% ethanol. The EEQ ranged from 7.55E-15 to 7.38E-11M for the unhydrolyzed extracts and from 4.30E-15 to 3.50E-10M for the hydrolyzed. Estrogenic activity of unhydrolyzed plant extracts was similar to that of hydrolyzed extracts. In some plants such as mungbean, soybean sprout, laver and sea tangle, estrogenic activity of unhydrolyzed extracts was even higher than hydrolyzed. This study suggests that the most of plant foodstuff contain estrogenic activity, even though the activities vary vastly. It should be noted that the glycosides as well as aglycones could exert the activity.

Keyword : Estrogenic activity, Plant foodstuff, Luciferase, Glycoside, Aglycone