

[P-53]**Estrogenic Activity of Daidzein, Genistein, and Their Glycosides
in Stably Transfected MCF-7-ERE Cells**Ilrang Kim¹, Yhun-Yhong Sheen³, Hoonjeong Kwon^{1,2}*¹Department of Food and Nutrition, Seoul National University and ²Research Institute of Human Ecology, Seoul National University and ³College of Pharmacy, Ewha Woman University, Seoul, Korea*

One of the most well known phytoestrogens isoflavone exist naturally in glycoside form. Glycosides, daidzin and genistin, are metabolized into aglycones, daidzein and genistein, respectively in the human digestive tract and further specific metabolites upon absorption. Biotransformation of phytoestrogen glycosides into aglycones has been thought to be necessary to exert their estrogenic activity due to their poor absorption and low binding affinity for estrogen receptor. However, relatively little works have been attempted on estrogenic activity of glycosides. In this study, estrogenic activity of daizein, genistein, and their glycosides was assessed by reporter gene assay using cultured MCF-7-ERE cells, human mammary cancer cells stably transfected with reporter genes. The glycosides daidzin, genistin and their aglycones daidzein and genistein were treated to the cells at various concentrations($1 \times 10^{-9} \sim 1 \times 10^{-5} \text{M}$) for various reaction times(1 ~ 20hr). Both the glycosides and their aglycones showed estrogenic activity in dose and time dependent manners. Glycosides, daidzin and genistin, exhibited estrogenic activity even though the activity of glycosides was lower than that of aglycones, daidzein and genistein. After treatment with $1 \times 10^{-5} \text{M}$ each isoflavone for 20hr, daidzein and genistein showed 26.16 and 47.98 fold induction, respectively. Their glycosides, daidzin and genistin, showed 21.31 and 25.13 fold induction, respectively. This study suggests that glycosides of phytoestrogens as well as aglycones can exert estrogenic activity.

Keyword: estrogenic activity, glycosides, aglycones, daidzein, genistein