

【P1 - 11】

THE DIFFERENCES BETWEEN GENISTEIN AND ESTROGEN ON CELL CYCLE REGULATORY AND APOPTOSIS RELATED PROTEIN EXPRESSIONS IN OVARIECTOMIZED FEMALE RATS AND MAMMARY TUMOR CELLS

Ock Jin Park*, Jang-In Shin. Dept of Food and Nutrition, Hannam University

Phytoestrogens, derived from soy isoflavones, have been shown to exert anti-proliferative activities and have cell arrest and apoptotic effects in cultured mammary tumor cells. Present study examined the effect of the genistein compound or estrogen on cell cycle regulators or apoptosis related proteins in ovariectomized female rats and MCF-7 cells. Bcl-2, pJNK and pERK1/2 expressions showed similar expression patterns in comparison with estrogen supplementation in a post-menopausal state. Whereas pp53 and Cox-2 expressions were stimulated by estrogen supplementation. In TPA treated mammalian cancer cell culture, the genistein compound showed estrogen antagonistic action at low concentrations with p21 and p53 expression, and furthermore, genistein could reverse some of the down-regulation of p21 by estrogen when it was treated in the combination with estrogen. Bcl-2, proapoptotic protein was up-regulated by genistein and was down-regulated by estrogen or the combination of genistein and estrogen in mammary tumor cell culture. Bax, anti-apoptotic protein were found to be down-regulated at the low concentrations of genistein and up-regulated at the low and high concentrations of estrogen, and the addition of genistein to estrogen resulted in the down-regulation of this protein. These results indicate that the genistein compound may display anti-proliferative activities through some of cell cycle regulator and pro-apoptotic protein and estrogen has stimulatory proliferative activities through the reverse action of genistein on these proteins.