

[P-75]**Effect of Genistein on the Wnt Signaling Pathway and Cell Growth**

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Reduction of breast cancer among Japan and Asia women has been associated with a high intake of isoflavone. Genistein, a natural isoflavonoid phytoestrogen, has been proven to suppress tumorigenesis and known to have anti-proliferative and apoptotic effects. Wnt signaling pathway is one of the most frequent signaling abnormalities known in human cancer. The aberrant regulation of Wnt signaling plays a role in breast cancer. In our experiments, we investigated whether genistein alter the expression of Wnt signaling related factors, known as carcinogenesis pathway, after treatment of genistein in MCF-7 (human mammary tumor cell line) and female rats. Cell proliferation in MCF-7 cells were measured by MTT assay and the protein expression of Wnt signaling related factors were analysed by Western blot. Genistein was subcutaneously injected to female rat of 7 weeks old in a single dose at the concentration of 40 mg/kg/day. At necropsy, the mammary gland and ovary were observed. We found that 50 uM genistein decreased the cell proliferation in MCF-7 cells and resulted in the down-regulated β -catenin, cyclinD1 and p-ERK and up-regulated p21. In vivo result, there were significant decreases in cyclinD1 and p-ERK at 40 mg/kg/day genistein plus 100 mg/kg/day LiCl, Wnt signaling activator, compared to 100mg/kg/day LiCl treatment. Taken together these results, genistein may action as anti-cancer by modulating the cell growth via Wnt signaling pathway.

Keyword: Genistein, MCF-7, SD female rat, β -catenin, Wnt pathway