

Validation of recombinant yeast and MCF-7 cell proliferation assay for the determination of phytoestrogens in various plants.

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Phytoestrogens are a group of chemicals produced naturally by a number of edible plants. In 1940, adverse effects on fertility were observed in animals that had been grazing on phytoestrogen-rich plants. In the early 1980s, it became clear that phytoestrogens could produce biological effects in humans. As phytoestrogens are present in plant-based foods consumed by human, notably soy, this encouraged research into the chemical identity, concentrations and biological properties of these compounds.

The present study was performed to determinate the phytoestrogen without adverse effects in various plants that has been used as a folk medicine in Korean, using recombinant yeast and MCF-7 cell proliferation assay. In recombinant yeast assay, 100mg/ml concentrations of clove bark, *Cudrania tricuspidata*, *Cortex mori*, and red bean show any estrogenic activities, while estrogenic activities were reduced at same concentrations of clove bark, *Cudrania tricuspidata*, and *Cortex mori* on MCF-7 cells.

Therefore, these plants may be capable of stimulating the estrogenic activities and preventing breast cancer. This study was supported by technology Development Program for Agriculture and Forestry, Ministry of Agriculture and Forestry (203004-03-HD110), Republic of Korea. And this work was also supported by Research Institute for Veterinary Science, Seoul National University.