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Anticancer Activity of *Glycyrrhiza* cultivar Extracts in Breast Cancer Cells

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Several studies report the anticancer effect of *Glycyrrhiza glabra* (*G. glabra*), *Glycyrrhiza uralensis* (*G. uralensis*) and their compounds. However, the anticancer effect of *Glycyrrhiza* cultivar roots are limited. In this study, we compared the anticancer effect of *Glycyrrhiza* cultivar (Wongam and Shinwongam) extracts with *G. glabra* and *G. uralensis* extracts in breast cancer cell lines. Freeze dried *Glycyrrhiza* root extracts were dissolved in cell culture media at 2 mg/mL and filtered by 0.2 μm filter. *Glycyrrhiza* root extracts were serially diluted at the concentrations of 10 μg/mL, 100 μg/mL, 200 μg/mL, 400 μg/mL, 800 μg/mL, 1000 μg/mL and 2000 μg/mL. MCF-7 and MDA-MB-231 breast cancer cells were treated with different concentrations of *Glycyrrhiza* root extracts and the cell viability was measured using MTT assay. In MCF-7 cells, *G. glabra* showed no significant difference with Wongam and showed significant difference with Shinwongam at 1000 μg/mL (*G. glabra* 101.2% and Shinwongam 82.68%) and 2000 μg/mL (*G. glabra* 83.07% and Shinwongam 54.05%). *G. uralensis* showed significant difference with Wongam at 2000 μg/mL (*G. uralensis* 66.48% and Wongam 95.02%) and showed no significant difference with Shinwongam. In MDA-MB-231 cells, *G. glabra* showed no significant difference with both Wongam and Shinwongam. *G. uralensis* showed significant difference with Wongam at 2000 μg/mL (*G. uralensis* 72.59% and Wongam 93.47%) and showed no significant difference with Shinwongam. In conclusion, the current study demonstrated that *G, glabra* and *G. uralensis* compared with Wongam, and Shinwongam at low concentrations (10 μg/mL~800 μg/mL) display similar cytotoxic potency.

Key words: Anticancer, *Glycyrrhiza glabra*, *Glycyrrhiza uralensis*, Wongam, Sinwongam

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