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S28. EVALUATION OF POTENTIAL ENDOCRINE DISRUPTING EFFECTS OF HERBAL DIETARY SUPPLEMENTS

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Endocrine disrupting (ED) chemicals are suggested to be involved in global decrease in semen volume and sperm counts, increase in urogenital abnormalities, rate of testicular cancer in males and breast cancer in females. Mainly synthetic ED compounds are blamed for those adverse effects while phytoestrogens are mostly known for their beneficial health effects. Phytoestrogens have been safely consumed traditionally in the Asian diet for many years. However nutritional and pharmaceutical use of these compounds has dramatically increased over the last decades by the Western population. Recent studies reported that phytoestrogens can be hazardous when exposed at susceptible life stages and administered late in life.

The present study is undertaken to screen the potential ED effect of widely used herbal dietary supplements in Turkey. Binding affinity of the selected products to estrogen receptor was evaluated by a "receptor binding assay" and their potential estrogenic or antiestrogenic effect was evaluated via a cell based *in vitro* assay, E-Screen. Aromatase inhibiting activity of the dietary supplements was evaluated *in vitro*. Finally the i*n vivo* "uterotrophic assay" was performed to confirm estrogenic effect found in *in vitro* assays. Another aim of the present study is to determine and quantitate the phytoestrogen content (genistein, daidzein, glycitein, formononetin, biochanin A and coumestrol) of the active dietary supplements found in screening assays.

Toxicological risk assessment is performed in four steps: hazard identification is the first step where the toxic effect of a compound is evaluated. Exposure assessment is another step where estimated daily exposure is evaluated. The present study provides data to both steps of toxicological risk assessment of the selected herbal dietary supplements.

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