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Capparis spinosa: Amazing medicinal fruit before and after processing with vinegar

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Statement of the Problem: Processed Capparis spinosa fruits have been used in Iranian Traditional Medicine (ITM) for treatment of various diseases; the fruits are believed to have hot and dry temperament. The present study was designed in order to find the impact of processing on some phytochemical constituents and biological activities of Capparis spinosa.

Methodology & Theoretical Orientation: The fruits were collected from Parsabad Moghan, Ardebil, Iran (2016) and processed with grape vinegar for 30 days. Total phenolics and alkaloids contents of the raw and processed fruits were determined. For quantitation of rutin and quercetin, R-HPLC with C18 column, methanol:formic acid 1% as the mobile phase (gradient), λ_{max} 257 nm was used. Cytotoxic activity of the fruits was determined by MTT method. Antioxidant properties were evaluated by DPPH and FRAP techniques. Fingerprinting of raw and processed fruits was prepared using TLC with silica gel as the stationary phase and n-butanol:acetic acid: H_2O 40:10:10 as the mobile phase.

Findings: Total phenolics decreased in the processed fruits (7.5 times). Rutin concentration did not change during processing but quercetin amount decreased. Total alkaloids content was reduced as well. While total phenolics decreased, antioxidant activities of the processed fruits increased using both DPPH and FRAP methods. No cytotoxic effect was observed for the raw fruits on normal human fibroblast cells (AGO1522) up to the concentration of 1000 µg/mL; however, decrease in the viability was observed for the processed fruits at this concentration. The fingerprints of the fruits were different which admitted the change in the fruit constituents due to processing.

Conclusion & Significance: In general, it seems that processing with vinegar reduced the unpleasant taste of the plant due to alkaloids and increased the antioxidant effects; therefore it would be more suitable for use in some diseases such as diabetes and hepatitis.

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Biography

Maryam Hamzeloo-Moghadam has her research interests in cytotoxic evaluation and apoptotic induction of natural products along with exploring the traditional manuscripts for biological evaluation or preparation of modern dosage forms.

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