

Evaluation of DNA damage effects of methanolic, hexanic & aqueous extracts of *Kelussia odoratissima* Mozaff.

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Background and Aims: *kelussia odoratissima mozaff* is one of the endemic plants of Iran and is used as food supplement and medicine. Extracts and essential oils of this plant, proved to possess anti-inflammatory, sedative, fibrinolytic, antacid, memory enhancer and antioxidant effects. Due to application in general population, it is necessary to elucidate safety profiles of this plant, including effects on genetic material. Therefore aim of this study is evaluation of genotoxic concentration of methanolic, hexanic and aqueous extracts of *kelussia odoratissima mozaff*.

Methods: Comet assay method was selected to evaluate the genotoxicity of *kelussia odoratissima mozaff* on hepG2 cells, as it is a fast, sensitive, inexpensive and easy to perform method. In this method after incubation of different concentrations of any extract of plant with cells, we added cell suspension to precoated normal agarose slides, after lysis the cells with lysis solution, followed with electrophoresis and dyeing. H₂O₂ was used as positive control. The comets were assessed using fluorescence microscopy. Parameters such as tail length, %DNA in tail and tail moment were measured and DNA damage was evaluated using Comet score software.

Results: According to evaluation of several concentrations of above extracts, we find that the concentration of 150 µg/ml of aqueous extract, 30 µg/ml of methanolic extract and 25 µg/ml of hexanic extract were genotoxic.

Conclusions: These data confirm genotoxic effect of *kelussia odoratissima mozaff* in above concentrations. Therefore, there are genotoxic compounds in plant that must be evaluated in future studies. Consumption of this plant below these concentrations is safe.

Keywords: Comet assay; *Kelussia odoratissima Mozaff.*; HepG2; Genotoxicity