



Evaluation of cytotoxicity of methanolic extract from *Zataria multiflora* Boiss. and its fractions on the colorectal adenocarcinoma cell lines (Caco-2)

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Background and objectives: *Zataria multiflora* Boiss. (ZM) has shown several effects in gastrointestinal, respiratory and nervous system. In this study, the effect of *Z. multiflora* was examined in colon cancer cell lines of Caco-2. **Methods:** Total extract and petroleum ether, chloroform and methanol fractions of the plant were prepared using warm maceration method based on the complete phenolic compounds. Different concentrations were prepared and examined on caco2 cell lines using (MTT) assay. **Results:** The extract and fractions of the plant showed the lowest viability at the concentration of 250 µg/mL. In the total plant extract, the lowest viability was 44.6±8.9% in the cell line. In fractions of petroleum ether, chloroform and methanol, the lowest viabilities were (43.12±2.61% and 43.64±2.32% and 43.17±1.82%), respectively. All fractions showed toxicity to the cell line in a concentration dependent manner. The least IC₅₀ was related to the petroleum ether and methanol fractions with IC₅₀ value of (48.60±12.50 and 51.06±12.15 µg/mL) on Caco-2 cell line, respectively. **Conclusion:** Considering the results, toxicity of the plant was shown on Caco-2 cell line which was due to petroleum ether and methanol fractions and indicated that toxic components of the plant were from both polar and nonpolar ones.

Keywords: Caco-2, cytotoxicity, *Zataria multiflora* Boiss.