

Antioxidant and cytotoxic activities of four plant extracts from Dena region of Iran

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Background and Aims: The use of plants as medicines goes back to the history of early civilizations. The great civilizations of the ancient Chinese, Indians and North Africans used plants for the treatment of a wide variety of diseases. Six of the top 20 prescriptions in 1996 where natural products and the clinical use of drugs such as artemisinin, etoposide and taxol has focused our attention on plants as sources of novel drug entities. Due to the growing of a vast variety of medicinal plants in the Dena region of Iran, this region is of much importance. We collected several plants including *Cerasus pseudoprostrata*, *Echinops kotschyi*, *Galium mite var. ghahramani* and *Rubia albicaulis* from this region. This research was conducted to evaluate the antioxidant and cytotoxic properties of the methanolic extracts of these plants.

Methods: The antioxidant activities of methanolic extracts of the plants were determined via 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging assay. The methanolic extracts were also screened for cytotoxic activity against three human cancerous cell lines (MOLT-4, K562 and MCF7) using the MTT assay.

Results: *Cerasus pseudoprostrata* methanolic extract had the highest antioxidant activity and *galium mite var. ghahramani* had the lowest antioxidant activity. The methanolic extract of *Echinops Kotschyi* exhibited potent cytotoxic activity against MOLT-4 and K562 cell lines among all extracts tested in this study. It was also found that the *Galium mite var. ghahramani* had no effect on the three cancerous cell lines.

Conclusions: The obtained results confirmed that all of methanolic extracts from the plants under study, except of *galium mite var. ghahramani*, had good antioxidant and cytotoxic capacities and might be suitable candidates for further phytochemical investigations.

Keywords: *Cerasus pseudoprostrata*; Antioxidant; DPPH; Cytotoxic activity