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Antioxidant and cytotoxic activity of several plants from Iran

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Background and Aims: Iran is one the most geographically diverse countries in the world and therefore one of the major producer of herbal medicines. Dena mountain region has many medicinal herbs. We collected several plants including Salix excelsa, Cirsium bracteosum, Rhamnus cornifolia, Dionysia bryoides, Dionysia revoluta, Solenanthus circinnatus and Pterocephalus canus coult from this region. In this study, we investigated the antioxidant and cytotoxic activity of methanolic extract of these plants.
Methods: For evaluation of the cytotoxic activity of these plants, different tumoral cell lines including K562 (human chronic myelogenous leukemia), MCF-7 (human breast adenocarcinoma) and MOLT-4 (human lymphocytic leukemia) were exposed to the 90% methanolic extracts and cytotoxic analysis was performed using MTT colorimetric assay. Furthermore, the antioxidant efficacies of the extracts were studied on the 80% methanolic and methanolic plant extracts employing 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging assays for testing.
Results: Obtained results indicated that a number of the extracts had the capacity to decrease the proliferation of tumoral cells. Among the plants, Dionysia bryoides was effective on all 3 cell lines. On the other hand, S. excelsa had the highest antioxidant capacity.
Conclusions: These results indicated that the extracts used in this study have a high potential for discovery of novel biologically active compounds.

Keywords: Antioxidant activity; Cytotoxic activity; Plants