



Abstract

In Vitro Antioxidant and Anticancer Activities of Some Local Plants from Bolu Province of Turkey [†]

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Abstract: Polyphenolic compounds of plant origin are of growing interest in cancer prevention and treatment especially because of their antioxidant potential contributing anticarcinogenic and antimutagenic effects. The diversity of Turkey's flora is remarkable for the development of new nutraceuticals or pharmaceuticals. In the present study, five local underutilized plant species: Kaldırık (*Trachystemon orientalis*), Sirken (*Chenopodium album*), Yağlı Mancar (*Rumex spp.1*), Efelek (*Rumex spp.2*), Ebegümeçi (*Malva spp.*) that are located in the Bolu Region of Turkey were investigated spectrophotometrically for total phenolic content and antioxidant capacity. Methanolic plant extracts were assessed for in vitro antioxidant activity by DPPH and CUPRAC assays. The cytotoxicity of plant extracts (100 to 1000 µg/mL) on MCT-7 cell lines were determined by MTT assay. The strongest antioxidant activities were shown for *Rumex spp.1* and *Rumex spp.2* with total phenolic contents of 26.71 and 16.17 mg Gallic acid equivalent/g dry weight (dw), respectively. *Rumex spp.1* exhibited the highest total antioxidant capacity with 110.51 mg Trolox equivalent/g. Phenolic compound analysis done by Ultra-Fast Liquid Chromatography (UFLC) showed that both of the plants contain rutin, gallic acid, chlorogenic acid at most. The strongest cytotoxic activity was shown for *Rumex spp.1* at highest concentration (1000 µg/mL) of these extracts with 56% cell viability.

Keywords: antioxidant activity; cytotoxicity; anticancer; phenolic compounds; natural products



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