Artemisinin HPLC Quantitative Analysis of *Artemisia campestris* leaves in Western Algeria.

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Secondary metabolites produced by plants for their self-defense mechanisms have been implicated in human health and therapeutic properties for most plants such as *Artemisia* genus. This genus, widespread over the world with up to 500 species, belongs to the Asteraceae family, locally named "Dgouft". In these study three extractions methods were used for evaluation antioxidant activities and analyzed quantitatively artemisinin in *Artemisia campestris* leaves using High Performance Liquide Chromatography (HPLC). Decoction, maceration and Ultrasound-assisted extractions (UAE) were widely used for the extraction secondary metabolites such as essential oils, flavonoids and total antioxidant activity. The extract antioxidant activities were evaluated using hydrogen atoms transfer methods (DPPH, total antioxidant capacity, and reducing power assays) and single electron transfer (ABTS and cupric reducing antioxidant capacity assays). The contents of artemisinin in *A.campestris* leaves extract were over 0.6%. The crud aqueous and methanolic extracts exhibited an antioxidant potential (14,63±0,84 and 36,82±0,55 µg mL−1). Our findings revealed good antioxidant and antimicrobial activities of *Artemisia campestris* extracts.

Keywords: *Artemisia campestris*, artemisinin, HPLC analysis, Phenolics, Ultrasound extraction.