

LC-MS ANALYSIS AND ANTIOXIDANT ACTIVITY OF THE HYDRO-ALCOHOLIC EXTRACT OF *MELISSA OFFICINALIS* L. FROM ALGERIA

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Abstract. The present work focuses on evaluation of the chemical composition and antioxidant activity of the hydro-methanolic extract of *Melissa officinalis* L. from Algeria. The liquid chromatography-mass spectrometry analysis allowed the identification of six compounds: caffeic acid, caftaric acid, hydroxyjasmonic acid glucoside, caftaric acid glucoside, rosmarinic acid and sagerinic acid. The *in-vitro* antioxidant activity of the hydro-methanolic extract was evaluated by using four different methods including: radical scavenging assay (DPPH), scavenging activity (ABTS), cupric reducing antioxidant capacity (CUPRAC), and ferric reducing power assay. The extract exhibited a relatively strong antioxidant activity compared to the synthetic antioxidants. The highest radical scavenging activity was registered using DPPH and ABTS methods, $IC_{50} = 20.53 \pm 2.64 \mu\text{g/mL}$ and $22.50 \pm 0.67 \mu\text{g/mL}$, respectively. These results suggest that *Melissa officinalis* L. could be considered a potential source of natural antioxidants with potential interest in the agrochemical and pharmaceutical industries.

Keywords: hydro-methanolic extract, *Melissa officinalis* L., LC-MS analysis, antioxidant activity.

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