

***In vitro* antioxidant and anticholinesterase activity of *Aloysia citrodora* L., leaves**

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This study aimed to investigate the cholinesterase (ChE) inhibitory and antioxidant activities of methanolic and the fraction butanol extracts of an Algerian medicinal plant: *Aloysia citrodora*. The amounts of total phenolic and flavonoid components in *A. citrodora* extracts were determined by expression as Gallic acid and quercetin equivalents, respectively. Both extracts (methanol, and fraction butanol) obtained from *A. citrodora* showed strong antioxidant activity in seven tested methods. Particularly, the IC₅₀ values of the fraction butanol, which was the richest in terms of total phenolic and flavonoid contents, were found to be the most efficient extract, towards β -carotene bleaching ($9.78 \pm 0.06 \mu\text{g/mL}$), DPPH free radical scavenging ($14.21 \pm 0.07 \mu\text{g/mL}$), ABTS cation radical scavenging ($7.11 \pm 0.07 \mu\text{g/mL}$) ferric reducing power ($21.33 \pm 0.09 \mu\text{g/mL}$) and phenanthroline assay ($5.96 \pm 0.03 \mu\text{g/mL}$) methods. All extracts were found to be inactive in antialzheimer activity. Our results justify the traditional use of the plant studied in Algeria, and value the biological and pharmacological effect of the extracts. They also open up in the near future the multiple perspectives which will undoubtedly allow us to enrich the scientific weight of this work.

Keywords: *Aloysia citrodora* L.; Antioxidant activity; Anticholinesterase; fraction butanol.