

Renda Chahna, Hamdi Bendif, Amina Bouzana, Larbi Derbak, Imane Haouame, Dilaycan Çam, Mehmet Öztürk, Khellaf Rebbas, Mohamed A. M. Ali, Chawki Bensouici, Fehmi Boufahja & Stefania Garzoli , 2025. *Salvia lanigera* Poirét Extracts: Study of the Phytochemical Profiling via GC–MS and HPLC–DAD and Bioactivity with ADME Analysis. *Food Analytical Methods*. <https://doi.org/10.1007/s12161-025-02863-2>
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This investigation evaluated the chemical composition and the biological activities of the ethanol and petroleum ether extracts of *Salvia lanigera* Poirét from the M'sila region, Algeria. Phytochemical analysis identified 17 compounds in the ethanol extract (HPLC–DAD), with cynarin, ellagic acid, and rutin as major components. Petroleum ether extract (GC–MS) revealed 16 compounds, predominantly palmitic acid and stearic acid. Antioxidant activity was assessed using four assays: the ethanol extract showed significant activity in the phenanthroline assay ($1.94 \pm 0.18 \mu\text{g/mL}$), and SNP assay ($124.78 \pm 0.59 \mu\text{g/mL}$), compared to the BHA standard. Both extracts demonstrated antibacterial and antifungal effects, with inhibition zones of 10–13 mm and MIC values ranging from 0.78 to 3.125 mg/mL against tested strains. Enzymatic assays revealed α -glucosidase inhibition by the ethanol extract ($\text{IC}_{50} = 27.07 \pm 0.78 \mu\text{g/mL}$), while α -amylase inhibition was lower (ethanol: $429.85 \pm 1.43 \mu\text{g/mL}$; petroleum ether: $520.31 \pm 1.63 \mu\text{g/mL}$). Acetylcholinesterase (AChE) and butyrylcholinesterase (BChE) inhibition were minimal ($\text{IC}_{50} > 200 \mu\text{g/mL}$ for AChE; ethanol: $365.84 \pm 5.48 \mu\text{g/mL}$, petroleum ether: $636.13 \pm 4.49 \mu\text{g/mL}$ for BChE). Urease inhibition was notable for the ethanol extract (54.88%) and comparable for the petroleum ether extract (52.00%). These findings highlight the potential of *S. lanigera* extracts as sources of bioactive compounds with antioxidant, antimicrobial, and enzymatic inhibitory properties, warranting further exploration for therapeutic applications.