

Olive oil as a bioactive carrier enabling chemical characterization and revealing the cosmetic potential of a traditional *Hypericum perforatum* macerate

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Abstract: This study aims to chemically characterize a traditionally prepared *Hypericum perforatum* olive oil macerate and to evaluate its cosmetic-relevant bioactivities. The macerate was prepared using fresh flowering aerial parts infused in olive oil under traditional sunlight conditions (Bulut et al., 2017). Fatty acid composition was determined by GC-FID/MS, while total phenolic and flavonoid contents and naphthodianthrone levels were analyzed using spectrophotometric methods. Antioxidant capacity and tyrosinase inhibitory activity were evaluated by in vitro assays. The results showed that the lipid matrix was dominated by oleic acid (73.92%), followed by palmitic and linoleic acids, confirming a monounsaturated fatty acid-rich profile. The macerate contained measurable amounts of phenolic (36.84 µg PCE/mg) and flavonoid compounds (35.49 µg QE/mg), along with naphthodianthrone (0.044 mg/mL, expressed as hypericin equivalents). In antioxidant assays, the macerate exhibited reducing capacity in the CUPRAC assay, whereas no significant radical scavenging activity was observed in DPPH and ABTS systems. In contrast, moderate tyrosinase inhibition (38.75% at 200 µg/mL) was detected. These findings indicate that the traditional maceration process enables the transfer of plant-derived bioactive compounds into an olive oil matrix, providing a chemically characterized system with potential relevance for dermocosmetic applications.

Keywords: *Hypericum perforatum*, olive oil macerate, oleic acid, phenolics, tyrosinase inhibition

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