

ANTIBACTERIAL ACTIVITY AND PHYTOCHEMICAL ANALYSIS OF WILD *ORIGANUM SYRIACUM* ESSENTIAL OIL COMMONLY USED IN THE WEST BANK

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Origanum syriacum (*O. syriacum*) is a very popular edible and medicinal plant in the East Mediterranean countries. The current study employed microwave-ultrasonic assisted hydro distillation (MAUHD) to produce EO from four wild *O. syriacum* samples. Gas chromatography coupled with mass spectrometer detector (GC/MS) was used for phytochemical analysis. Assessment of their antibacterial and antioxidant potentials *in vitro* was carried out. Sesquiterpenes (24-39%) α -humulene and caryophellene in addition to oxygenated monoterpenes (26-41%) thymol and carvacrol represent the bulk of phytochemicals detected by GC-MS analysis. Thymol-rich EOs were found to be most effective against *Staphylococcus aureus* and methicillin-resistant *Staphylococcus aureus* (MRSA) (MIC 0.4 mg/mL). Carvacrol and α -humulene rich chemo type EO from Bethlehem, exhibited the highest inhibitory effect of *Pseudomonas aeruginosa* (MIC of 1.6 mg/mL). Interestingly, γ -terpinene-rich EO from Jerusalem and Bethlehem showed promising antibacterial properties against *Enterococcus faecium* and MRSA (MIC 100 and 200 μ g/mL respectively). In conclusion, the current study supports the use of MAUHD as a time-saving, cost-effective, environment-friendly method for production of high quality *O. syriacum* EO for potential use in the treatment, prevention and adjuvant therapy against bacterial infections without compromising the quantity.



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