

## Documents

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**Assessment of the antimicrobial and free radical scavenging activities of *Moluccella spinosa*, *Helichrysum sanguineum*, and *Styrax officinalis* folkloric medicinal plants from Palestine**

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**Abstract**

The emergence of pathogenic microbes with increased resistance to established antibiotics provides a major incentive for the discovery of new antimicrobial agents. Herbals may provide valuable solutions for this global problem. In addition, the replacement of harmful synthetic antioxidants with natural ones may prevent various serious diseases. The present investigation describes for the first time the antioxidant and antimicrobial activities of the aqueous and organic extracts of *Helichrysum sanguineum*, *Moluccella spinosa* and *Styrax officinalis* plants aerial parts. The free radical scavenging activity was estimated using the 2,2-diphenyl-1-picrylhydrazyl method, while the antimicrobial activity was evaluated against selected microbial strains from American Type Culture Collection and clinical isolates such as *Shigella sonnei*, *Staphylococcus aureus*, *Enterococcus faecium*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Candida albicans*, *Epidermophyton floccosum* and Methicillin Resistant *Staphylococcus aureus* (MRSA) using minimum inhibitory concentration assay. A mixture of phytochemical compounds was found in all of the studied plants extracts which also showed remarkable potentials of antioxidant and antimicrobial activities. The current study provides initial data that justify the use and importance of these plants in the Palestinian traditional medicine. In addition, it provides evidence that the aqueous and organic extracts of *H. sanguineum*, *M. spinosa* and *S. officinalis* exhibited interesting antioxidant activity comparing with Trolox. Furthermore, the organic extract of *H. sanguineum* strongly exhibited bacterial growth of *S. aureus*, *E. faecium* and MRSA which suggested to be used as antibiotic alternative or as sufficient natural food preservative. © 2018, Institute of Korean Medicine, Kyung Hee University and Springer Science+Business Media B.V., part of Springer Nature.

**Author Keywords**

Antibacterial; Antifungal; Antioxidant; *Helichrysum sanguineum*; *Moluccella spinosa*; *Styrax officinalis*

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