

Abstract

Background: Medicinal plants are amply utilized in traditional medicine in different parts of the world and are considered as pivotal in human health care. *Gundelia tournefortii* L. is a well-known medicinal plant and an important food source in Palestine. In the present study, the methanol, acetone, hexane and aqueous *G. tournefortii* extracts were screened for the presence of phytochemical groups and evaluated their antioxidant and antimicrobial activities.

Methods: Four extracts of *G. tournefortii* plant were phytochemically identified using standard analytical methods, while the antimicrobial activity was assessed through the microdilution method on seven bacterial pathogens and one fungal strain. Moreover, α , α -diphenyl- β -picrylhydrazyl (DPPH) free radical scavenging assay was utilized to evaluate the antioxidant efficacy.

Results: The acetone, aqueous, methanol, and hexane *G. tournefortii* extracts revealed potential antioxidant activity with IC₅₀ values of 3.71 ± 0.20 , 4.02 ± 0.24 , 17.38 ± 0.26 and 28.1 ± 0.28 $\mu\text{g/ml}$, respectively comparing with the positive control (Trolox) which has an IC₅₀ value of 3.23 ± 0.92 $\mu\text{g/ml}$. However, only the methanol and acetone extracts have antibacterial activity against *S. aureus* with MIC value of 3.125 mg/ml.

Conclusion: The findings of the current investigation indicate that the methanol, hexane, aqueous and acetone extracts of *G. tournefortii* plant have strong antioxidant activity and the methanol and acetone extracts have antibacterial activity against *S. aureus*. These extracts can be utilized as antioxidant medications or as food supplements to fight harmful free radicals or as natural food preservatives.