

عنوان مقاله:

(Phytochemical composition and antibacterial properties of the essential oil of *Achillea biebersteinii* Afan. (Asteraceae)

محل انتشار:

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خلاصه مقاله:

Background and aims: The aim of this study was to characterize the chemical composition and antimicrobial properties of *Achillea biebersteinii* essential oil (EO). Methods: The chemical composition of samples obtained from Marand city in East Azerbaijan, was assessed using gas chromatography mass spectrometry (GC/MS). The antimicrobial properties were evaluated by the disc diffusion method against methicillin-resistant *Staphylococcus aureus* (MRSA), other extended-spectrum beta-lactamases (ESBLs) producing, as well as Gram-negative and Gram-positive bacteria. The minimum inhibitory concentration (MIC) value of EO was assessed using the agar dilution method. Results: In *A. biebersteinii* the major compounds were α -terpinene (41.42%), γ -carene (13.96%), m-cymene (13.41%) and 1,8-cineole (8.91%). The EO showed antimicrobial activity against ten microorganisms, especially *Streptococcus sanguis*, *S. aureus* (MRSA strain), and *Klebsiella pneumoniae* (ESBL-producing strain), which was potentially better than tetracycline and kanamycin. Conclusion: This study confirmed that EO of *A. biebersteinii* has in vitro antimicrobial activity against Gram-negative and Gram-positive bacteria, which has made it an alternative antibacterial agent.

کلمات کلیدی:

Biological activity, cultivation, Essential oil composition, *Thymus fedtschenkoi*

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