

عنوان مقاله:

Antibiofilm and Antibacterial Activity of *Urginea maritima* Against *Staphylococcus aureus* and *Pseudomonas aeruginosa*

محل انتشار:

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خلاصه مقاله:

Background: One of the most important therapeutic challenges is fighting against infectious diseases and developing their bacteria high antibiotic resistance. Bacterial resistance is one of the reasons for the growing uses of herbs in treating bacterial infections. Objectives: The purpose of this study was investigating the antibacterial and anti-biofilm properties of the bulb of *Urginea maritima* against *Pseudomonas aeruginosa* (ATCC: ۲۷۸۵۳, ATCC: ۹۰۲۷) and *Staphylococcus aureus* (ATCC: ۲۵۹۲۳, ATCC: ۹۱۴۴). Methods: Methanol and acetone extracts of the bulb were prepared by the Soxhlet method. The antibacterial properties of the extracts were evaluated by the agar well diffusion method, and the minimum inhibitory concentration was evaluated by the microdilution method. The anti-biofilm effect of the extracts was also measured by the microplate technique and by crystal violet dyeing. Determining the compounds of the *U. maritima* bulb was done by the GC/MS device. Results: Results showed that acetone extract of *U. maritima* bulb prevents the growth of standard and clinical strains of *P. aeruginosa* and *S. aureus*. The highest antibiofilm effect was related to the methanol extract of the bulb against *S. aureus*, with the reducing of biofilm production of about ۹۴%. Most of the extracted compounds of the *U. maritima* bulb include xylene, pentane, and phenylethane. Conclusions: The data of this study suggest that methanol and acetone extracts of the bulbs of *U. maritima* have potential activity as an antibacterial and antibiofilm agent, especially against *S. aureus*.

کلمات کلیدی:

Anti-Bacterial Agent, Biofilms, Plant Extract, *Urginea maritima*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*

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