

عنوان مقاله:

Antibacterial Activity of Pomegranate (*Punica granatum* L.) Seed and Peel Alcoholic Extracts on *Staphylococcus aureus* and *Pseudomonas aeruginosa* Isolated From Health Centers

محل انتشار:

فصلنامه گزارش های زیست فناوری کاربردی، دوره 5، شماره 1 (سال: 1397)

تعداد صفحات اصل مقاله: 5

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خلاصه مقاله:

Introduction: Pomegranate (*Punica granatum* L.) is an ancient fruit with numerous phytochemical bioactive compounds. In this study, the antibacterial activity of ethanolic extracts of pomegranate peels and seeds were investigated against *Pseudomonas aeruginosa* and *Staphylococcus aureus* clinical isolates from Tabriz health centers (2017). **Materials and Methods:** The ethanolic extracts of pomegranate seed and peel were prepared and GC-MS chromatogram analyzed using Agilent 7890B gas chromatography. The antibacterial activities of extracts were evaluated by agar diffusion and microbroth dilution methods against clinical isolates of *P. aeruginosa* (n = 10), *S. aureus* (n = 10) and standard strains. **Results:** The ethanolic extracts of pomegranate seed and peel showed inhibitory effects on clinical isolates of *P. aeruginosa* and *S. aureus*. The minimum inhibitory concentrations (MICs) of pomegranate peel and seed extracts were 12.5 and 25.0 mg/mL, respectively. In addition, the minimum bactericidal concentrations (MBCs) of pomegranate peel and seed extracts were found to be 25.0 and 50 mg/mL, respectively. In all of the studied bacterial isolates, the MICs and MBCs values for pomegranate seed extract were significantly higher than those for pomegranate peel extract ($P < 0.05$). The mean inhibition zones and MICs values indicated that the antibacterial activity of pomegranate peel extract had more potent effect on studied bacterial isolates compared with pomegranate seed extract. **Conclusions:** According to the findings, the pomegranate peel and seed extracts showed antibacterial activities against bacterial isolates in this study; however, the peel extract had a stronger antibacterial effect than the seed extract. Therefore, further studies including cell toxicity assay and in vivo investigations are recommended.

کلمات کلیدی:

Antibacterial Effect, Alcoholic Extracts, *Punica granatum* L., *Staphylococcus aureus*, *Pseudomonas aeruginosa*

