

## عنوان مقاله:

Anti-Biofilm Activity of Punica granatum, Ricinus communis, and Allium sativum Plant Extracts on Streptococcus mutans

## محل انتشار:

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## خلاصه مقاله:

**Aims** Streptococcus mutans (S. mutans) is part of human oral cavity microbiome and is known to be responsible of dental caries. The aim of this study was to evaluate the inhibitory effects of Punica granatum, Ricinus communis, and Allium sativum extracts on biofilm formation caused by S. mutans. **Materials & Methods** In this experimental study, the biofilm formation was carried out by broth dilution method with glucose -supplemented Tryptic Soy Agar (TSB) in 96-well microtiter plates. Seven serial dilutions from the aqueous extracts of the Punica granatum, Ricinus communis, and Allium sativum were prepared. Then, a suspension of S. mutans was added to the wells. The anti-biofilm effects of the extracts and turbidity were measured by an ELISA reader apparatus at OD492nm. Experiments were completed in triplicate. Findings Ricinus communis was more active on S. mutans than other extracts. In comparison with others, the mean OD obtained in the presence of a concentration of 50mg of the plant extract (OD=0.083) was close to the negative control (OD=0.068). This plant was effective in higher concentrations (50, 25, 12.5 and 6.25mg/ml). Allium sativum extract has a moderate effect on S. mutans. The lowest activity belonged to Punica granatum extract. **Conclusion** The extract of Ricinus communis has strong anti-biofilm activity against Streptococcus mutans, when compared to other extracts, Allium sativum extract show moderate activity on the biofilm formation.

Aqueous extract of Punica granatum peel isn't very effective on S. mutans

## کلمات کلیدی:

Streptococcus mutans; Biofilms; Punica granatum; Ricinus communis; Allium sativum

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