

The anti-adherence effect of Piper betle and Psidium guajava extracts on the adhesion of early settlers in dental plaque to saliva-coated glass surfaces

Type: Article

Abstract:

The aqueous extracts of Piper betle and Psidium guajava were prepared and tested for their anti-adherence effect on the adhesion of early plaque settlers (Strep. mitis, Strep. sanguinis and Actinomyces sp.). The saliva-coated glass surfaces were used to simulate the pellicle-coated enamel surface in the oral cavity. Our results showed that the anti-adherence activities of Piper betle and Psidium guajava extracts towards the bacteria were different between the bacterial species. Psidium guajava was shown to have a slightly greater anti-adherence effect on Strep. sanguinis by 5.5% and Actinomyces sp. by 10% and a significantly higher effect on Strep. mitis (70%) compared to Piper betle. The three bacterial species are known to be highly hydrophobic, and that hydrophobic bonding seemed to be an important factor in their adherence activities. It is therefore suggested that the plant extracts, in expressing their anti-adherence activities, could have altered the hydrophobic nature of the bonding between the bacteria and the saliva-coated glass surfaces.

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