

Effect of Piper betle L. leaf extract on the virulence activity of Streptococcus mutans - An in vitro study

Type: Article

Abstract:

In this study the effect of crude aqueous extract of the leaves of Piper betle L. on the virulence properties of Streptococcus mutans ATCC 25175 was investigated. It was carried out based on the effect of the extract towards growth, cell surface hydrophobicity, adhering property and glucosyltransferase activity of the S. mutans. The concentration of crude aqueous extract of Piper betle L. used in the experiments above was between 0 to 20 mg mL⁻¹. Chlorhexidine (0.12%) and sterile deionised water was used as positive and blank control, respectively. The results obtained showed that the crude extract at a concentration as low as 2.5 mg mL⁻¹ exhibited reduced effect towards the growth ($p < 0.01$), adhering ability ($p < 0.01$), glucosyltransferase activity ($p < 0.05$) and cell surface hydrophobicity ($p < 0.05$) of S. mutans when compared with the blank control. This implies that the Piper betle L. extract may have anti-virulence property towards S. mutans.

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