

Comparative studies on the effect of crude aqueous (CA) and solvent (CM) extracts of clove on the cariogenic properties of Streptococcus mutans

Type: Article

Abstract:

A study was conducted to compare the efficiency of crude aqueous (CA) and solvent extracts (CM) of clove on the caries-inducing properties of Streptococcus mutans. The cariogenic properties investigated included the cell adhesion, cell-surface hydrophobicity and glucan synthesis activities of S. mutans. There was a significant difference between the effect of the CA and CM extracts on the adhesion of S. mutans ($P < 0.05$) within a concentration range of 5-15 mg/ml, the CM extract demonstrating a slightly higher inhibitory effect. However, the effect of the CM extract on the cell-surface hydrophobicity of S. mutans was weaker than that of the CA extract. The two extracts were found to reduce the synthesis of water-insoluble glucan (WIG) by almost 50% at a concentration as low as 0.5 mg/ml and the CM extract exhibited a significantly higher inhibitory effect than the CA extract ($P < 0.05$). The present findings indicate that both the CA and CM extracts exert inhibitory effects on the cariogenic properties of S. mutans and that the CA extract is as equally effective as the CM extract.

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Source	Journal of oral science
ISSN	1343-4934
DOI	10.2334/josnusd.48.117
Volume (Issue)	48(3)
Page	117-123
Year	2006

Keyword:

anticaries agent, glucan, glucosyltransferase, plant extract, article bacterium adherence, biosynthesis, chemistry, comparative study, drug antagonism, drug effect ,Eugenia, Hydrophobicity, metabolism, Streptococcus mutans, Bacterial Adhesion, Cariostatic Agents, Chemistry, Pharmaceutical, Glucans, Glucosyltransferases, Plant Extracts

Please Cite As:

RAHIM, Z. H. & KHAN, H. B. 2006. **Comparative studies on the effect of crude aqueous (CA) and solvent (CM) extracts of clove on the cariogenic properties of Streptococcus mutans.** *Journal of oral science*, 48, 117-123.

URL:

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