

Evaluation of in-vitro antibacterial activity of cinnamomum zeylanicum extract on different microorganisms of the dental plaque

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Abstrak

The present study was conducted to evaluate the antibacterial activity of aqueous and ethanol extracts of *Cinnamomum zeylanicum* on different types of dental plaque microorganisms. Screening study was performed to detect the potential antibacterial activity against *S. aureus*, *E. coli*, *S. mutans*, *L. casei*, *B. fragilis*, *A. actinomycetemcomitans* and dental plaque pool samples. From the screening test, values of Minimum Inhibitory Concentration (MIC) were determined. The lowest MIC value was 25 mg/ml of aqueous and 12.5 mg/ml of ethanol extract for *S. aureus*. The highest MIC values were seen in *A. actinomycetemcomitans* and dental plaque anaerobic pool samples with 300 mg/ml of aqueous extract and 150 mg/ml of ethanol extract. The MIC values for aqueous extracts ranged from 25 to 300 mg/ml whereas for ethanol extract it ranged from 12.5 to 150 mg/ml. The high concentration of ethanol extract, 100 mg/ml in the fixed plant concentration test, showed the strongest inhibition effect for all the organism tested. Generally, the ethanol extract of *Cinnamomum zeylanicum* demonstrated a stronger antibacterial activity compared to the aqueous extract. This study also compared the antibacterial activity of chlorhexidine with that of the plant extracts. Chlorhexidine showed a higher antibacterial effect on the microorganisms, with almost all organisms inhibited.