

# Comparative Assessment of the Antimicrobial Efficacy of Triclosan, Amoxicillin and Eugenol against *Enterococcus faecalis*

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## ABSTRACT

**Aims:** Elimination of microorganisms and prevention of recurrence of infection from the complex root canal system of primary teeth requires an obturating material with broad antimicrobial activity. Hence, the purpose of the study is to assess and compare the antimicrobial efficacy of Triclosan, Amoxicillin and Eugenol individually and in combinations against a resistant microorganism viz., *Enterococcus faecalis*.

**Materials and methods:** A two-fold serial dilution method was used to check the minimum inhibitory concentration (MIC) of triclosan, amoxicillin and eugenol against thirty *E. faecalis* (isolated from oral lesions). The resistant strains were subjected to different combinations of three agents by modified checkerboard method. MIC was determined after incubation for 24 hours at 37°C. Then the three dilutions from MIC were inoculated on BHI agar plates and incubated overnight to determine minimum bactericidal concentration (MBC).

**Results:** The mean MIC and MBC of triclosan was 3.43 µg/mL and 3.75 µg/mL respectively. Whereas for amoxicillin, it was 3.43 µg/mL and 3.85 µg/mL. Eugenol did not show any inhibition up to a concentration of 3200 µg/mL. In combination, eugenol showed good synergistic effect with both triclosan and amoxicillin. In combination with triclosan, eugenol showed much promising result as compared with amoxicillin. But triclosan and amoxicillin combination showed inhibition at higher concentrations.

**Conclusion:** Triclosan and eugenol combination showed better effectiveness against *E. faecalis* in comparison to amoxicillin and eugenol. Triclosan and amoxicillin showed antagonism when used in combination against *E. faecalis*.

**Keywords:** Amoxicillin, Double dilution method, Eugenol, Modified checkerboard method, Triclosan.

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