

## Antimicrobial activity of an experimental dentifrice base *Ricinus communis*: for complete denture

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**Introduction:** Inadequate denture hygiene habits promote: the accumulation of biofilm on the surfaces of removable dentures. The biofilm consist in the main etiological factor of chronic atrophic candidiasis, disease that affects 25 to 65% of denture wearers. The use of a specific product for denture cleansing with the ability to remove biofilm and antimicrobial activity is needed since patients have difficulty in finding these products in the Brazilian market. **Objective:** The objective was to evaluate antimicrobial activity of an experimental dentifrice of *Ricinus communis* against *C. albicans*, *C. glabrata*, *E. coli*, *S. aureus*, *S. mutans*, *E. faecalis* and *B. subtilis* when compared to other dentifrices. **Methods:** To evaluate the antimicrobial activity, biofilm was formed on the surface of 455 sterilized acrylic resin specimens. After contamination, specimens were manually brushed for 60s with water and dentifrices A - Colgate, B - Experimental, C - Dentu-Cream and D - Trihydral (n=10), immersed in liquid culture, which was re-suspended for sowing in solid culture media. Positive control (contaminated and not brushed) and negative control (not contaminated) were employed. Data were transformed in Log 10 and they were submitted to ANOVA and Tukey tests (p<0.05). **Results:** Dentifrice B (3.98±0.57), A (3.76±0.78) and C (3.23±0.23) showed similar antimicrobial activity against *C. albicans*, but all dentifrices showed activity similar to the water group (3.99±0.44). For *C. glabrata*, dentifrices A (3.84±0.49), B (3.96±0.54) and D (3.35±0.59) presented statistical equality. For *E. coli*, dentifrices A (2.00±1.79), B (1.53±1.63), C (1.04±1.15), D (1.47±0.64) and water (2.34±1.68) presented similar results. For *S. aureus*, dentifrices A (4.78±0.72), B (4.99±0.53) and water (4.86±0.43) were statistically similar. For *S. mutans*, the dentifrice B (7.26±0.67) was statistically different from the others, but was similar to water (7.58±0.24) and positive control group (7.77±0.01). For *E. faecalis*, dentifrices A (3.82 ±0.83), B (3.66±0.56), C (2.84±0.81), D (3.13±0.46) and water (3.85±0.70) presented similar results. For *B. subtilis*, dentifrices A (1.87±1.44), B (1.56±1.73), C (1.25±1.14), D (1.50±0.94), water (1.52±1.11) and positive control (1.90±1.53) presented similar results. **Conclusion:** The antimicrobial activity of experimental dentifrice at 10 % was similar to commercial dentifrices evaluated, including against *Candida* species. Future studies should be focused on the increase of antimicrobial activity of the experimental dentifrice.

**Keywords:** Dentifrice, *Ricinus communis*, Microbiology, Complete denture.

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