



Disinfection efficacy to control Candida growth on soft denture liners

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Introduction:

Candida growth on removable dentures may induce a candidiasis and an irritation of the mucosa especially on PMMA-based soft denture liners and to a lesser extent on Silicone liners. The aim of this *in vitro* study was to test different possibilities to reduce the candida plaque on a silicone soft denture liner with mouthrinses and a disinfectant.



Fig. 1: Candida infection

Materials and methods:

Cylindrical specimens (diameter 10 mm, thickness 2 mm) were made of a soft denture liner (Mucopren soft, Kettenbach, G) and aged in an artificial mouth (Regensburger Kausimulator, EGO, G; 3000 cycles 5°C/55°C H₂O; 2 min).

After incubation with *Candida albicans* (ATCC10231) for 2.5 h the specimens were treated with:

- Dynexan (Kressler Pharma, G; 0,1 % Chlorhexidin),
- Plax (Colgate Palmolive, G; 0,3 % Triclosan) and
- Blend-a-dent 2 Phasen Ultra tabs (Procter & Gamble GmbH, G)

according to the manufactures instructions using the appropriate concentration,

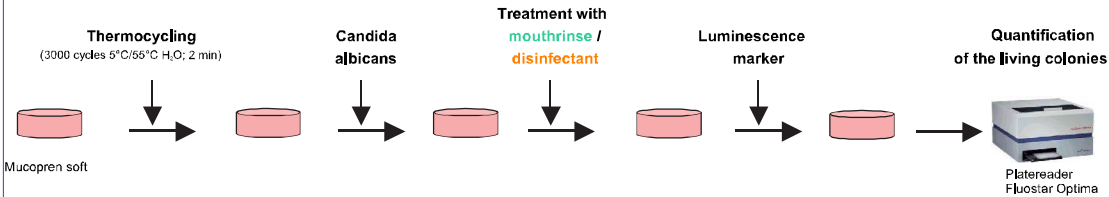


Fig. 2: Sequence of the test

Living, adherent *Candida* colonies were quantified using a Luminescence Kit (ViaLight, Cambrex, USA) and the platereader Fluostar Optima (bmj, G). The setup was performed in triplicate using 10 samples and controls per group. Treatment with phosphate buffered saline (PBS) served as a control. Medians and 25/75 percentiles were calculated. Statistical analysis was performed using the Mann-Whitney-U-test. The level of significance was set to $p=0.05$.

	Concentration	Duration of treatment
Dynexan	pure	60 s
Plax	pure	20 s
Blend-a-dent 2 Phasen ultra	solution:	15 min
	200 ml H ₂ O	

Fig. 3: Way of application of the different liquids

Results:

The medians of the relative fluorescence intensity varied between 18 and 1095 units.

Almost no colonies were found using Blend-a-dent 2 Phasen Ultra. The difference to every other tested group was significant.

The mouthrinses did not reduce the *Candida* amount significantly.

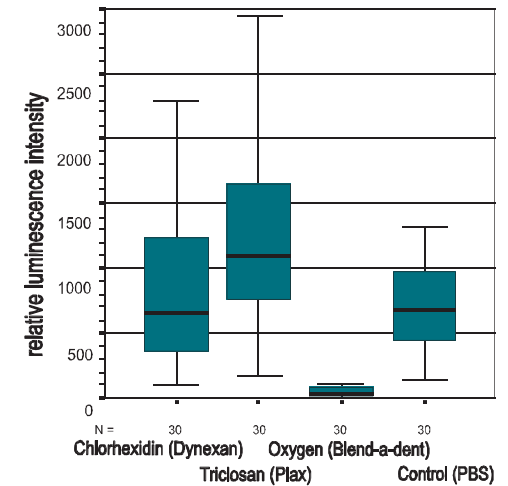


Fig. 4: Relative luminescence intensity

	Dynexan	Plax	Blend-a-dent 2 Phasen Ultra	PBS (control)
Median	643	1095	18	674
25/75-percentiles	353/1224	759/1609	5/71	434/955

Fig. 5: Medians and 25/75-percentiles of the relative luminescence intensity

Conclusion:

The mouthrinses showed no significant *Candida* reduction on the denture liner material. Only the disinfectant tabs seem to be effective to control *Candida* growth on soft denture liner.