

Tags

Octenidine, Wash-mitts, *Candida auris*, *Candida albicans*, EN 13624

Title

Efficacy of octenidine- and chlorhexidine-based wash-mitts against *Candida albicans* and *Candida auris* – a comparative study

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Source

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Aim of the study

Candida auris is a yeast that is known to colonize the skin, unlike other *Candida* spp. which colonize the gastrointestinal tract. This results in a direct correlation to environment contamination, whereupon *C. auris* leads to transmission and persistent outbreaks of invasive infections in hospitals. An infection can induce conditions including bloodstream infections, myocarditis or surgical wound infections. Due to its detrimental impact on healthcare, *C. auris* is defined as an urgent threat by the US Centers for Disease and Prevention and listed as one of the four micro-organisms of critical priority in the WHO fungal priority pathogen list (WHOFPL). Wash-mitts with antiseptic agents can be used for decolonizing the body. The extent to which the topical antiseptics chlorhexidine and octenidine are suitable for this purpose will be investigated in this study.

Methods

Two *C. auris* strains and one *C. albicans* strain, as the surrogate test organism for yeasticidal efficacy tests, were tested against two commercially available antiseptic-impregnated wash-mitts based on either octenidine dihydrochloride (OCT; 100 g contains 0.4 g octenidine dihydrochloride) or chlorhexidine digluconate (CHG; 100 g contains 2% chlorhexidine digluconate, 0.04% benzalkonium chloride). Quantitative suspension tests according to EN 13624 were conducted under conditions of low organic soiling, using the impregnation liquid squeezed from the wash-mitts at a contact time of 30 s at different concentrations (dilutions) between 0.5% and 97%.

Results

The efficacy of the OCT wash-mitts against different *Candida* spp. was tested at concentrations of 0.5%, 1%, 10%, 50% and 80%. A reduction factor ≥ 4 log₁₀ (yeasticidal efficacy according to EN 13624) was found at concentration of $\geq 1\%$ for both *C. auris* strains. At concentrations of $\geq 10\%$ all *Candida* species investigated were eradicated.

The CHG-based impregnated antiseptic wash-mitts were tested at concentrations of 10%, 50%, 80% and 97%. The efficacy against both *C. albicans* and the two *C. auris* strains was below 4 log₁₀ reduction for every concentrations studied. The surrogate test organism *C. albicans* was significantly less susceptible compared to the tested *C. auris* strains in all cases.

Fig. 1: chemical susceptibility to OCT-based impregnated wash-mitts

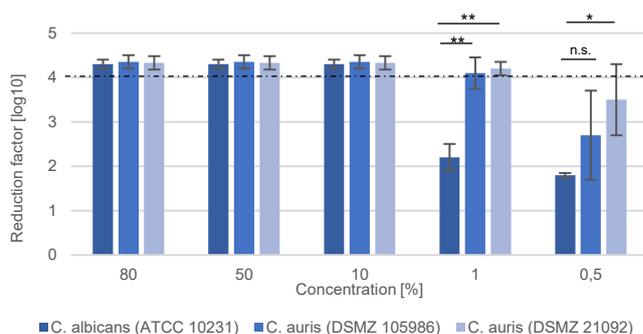
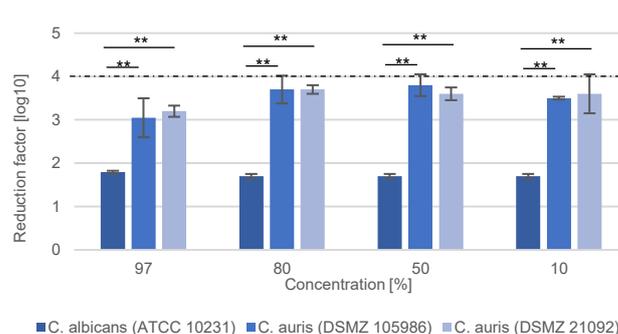


Fig. 2: chemical susceptibility to CHG-based impregnated wash-mitts



Conclusion

The findings in this study demonstrate that not all antiseptic-impregnated wash-mitts are equally effective against *Candida albicans* and *Candida auris*. OCT-based wash-mitts showed a higher efficacy compared to CHG-based wash-mitts.