

## Research Compact

### Tags

Octenidine, Wound

### Title

**Influence of human wound exudate on the bactericidal efficacy of antiseptic agents in quantitative suspension test on the basis of European standards (DIN EN 13727)**

### Authors

Radischat N\*, Augustin M, Herberger K, Wille A, Goroncy-Bermes P

\*Corresponding author: Schülke & Mayr GmbH, Norderstedt, Germany

### Source

2020, International Wound Journal, [10.1111/iwj.13336](https://doi.org/10.1111/iwj.13336)

### Aim of the study

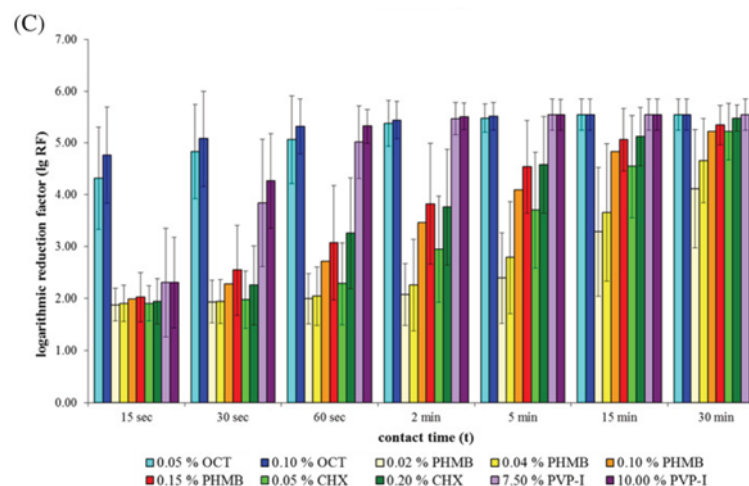
The efficacy of antiseptics is usually tested *in-vitro* under defined conditions as documented in DIN EN 13727 with albumin and sheep erythrocytes as organic challenge. However, these conditions do not simulate the situation in a real wound. Thus, this study compares the efficacy of octenidine, chlorhexidine, polyhexanide and povidone-iodine with human wound exudate as organic load.

### Methods

Wound exudate of 30 patients with chronic leg ulcers was collected via three different methods (24h-sponge, ultrasonic suspension and vacuum exudate) and wound characteristics (protein content, pH, temperature) as well as total germ counts were assessed. Wound exudates were inoculated with methicillin-resistant *S. aureus* and tested according to DIN EN 13727.

### Results

0.1% and 0.05% octenidine showed the overall highest performance with human wound exudate compared to standardized conditions. Full 5-log-fold reduction efficacy was reached after 30 and 60 seconds, respectively. Chlorhexidine and polyhexanide were the least effective in this test.



Contact time required to achieve 5 log-step reduction in quantitative suspension test with human wound exudate.

### Conclusion

**In conclusion *in-vivo* conditions are simulated more realistically using human wound exudates instead of standardized organic load as challenges. Besides the proteins found in wound exudate, other components such as microbial flora seem to influence the antimicrobial activity of antiseptics. Octenidine is highly effective in this environment.**