



*Research article*

**Antimicrobials cetylpyridinium-chloride and miramistin demonstrate non-inferiority and no “protein-error “compared to established wound care antiseptics *in-vitro***

**Julian-Dario Rembe<sup>1,\*</sup>, Vivian-Denise Thompson<sup>2</sup> and Ewa Klara Stuermer<sup>3</sup>**

<sup>1</sup> Department of Vascular and Endovascular Surgery, Medical Faculty and University Hospital Duesseldorf, Heinrich-Heine-University, Duesseldorf, North-Rhine Westphalia, Germany

<sup>2</sup> Chair for Translational Wound Research, Centre for Biomedical Education and Research, Witten/Herdecke University, Witten, North-Rhine Westphalia, Germany

<sup>3</sup> Department of Vascular Medicine, University Heart Center, University Medical Center Hamburg-Eppendorf (UKE), Hamburg, Germany

\* **Correspondence:** Email: [julian-dario.rembe@med.uni-duesseldorf.de](mailto:julian-dario.rembe@med.uni-duesseldorf.de).

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**Supplementary Table 1.** Overview microbial reduction rates. Reduction rates (in  $\Delta\log_{10}$  CFU ml<sup>-1</sup>) for all tested antimicrobials calculated in relation to initial microbial counts against tested microorganisms (*S. aureus*, *P. aeruginosa*, *E. coli*, *E. faecium*, *C. albicans*) over a total 10 min of exposure with either 0.3% or 3% protein load. Values are expressed as means  $\pm$  SEM. Grey-scaling indicates levels of antimicrobial reduction: no color indicates  $< 5 \Delta\log_{10}$  CFU ml<sup>-1</sup>, light grey indicates minimum required reduction ( $\geq 5 \Delta\log_{10}$  CFU ml<sup>-1</sup> for bacteria as specified by DIN EN 13727 or  $\geq 4 \Delta\log_{10}$  CFU ml<sup>-1</sup> for yeast as specified in DIN EN 13624) and dark grey indicates complete reduction of initial microbial counts.

<i>Octenidine/phenoxyethanol (OCT/PE)</i>										
0.3 % Albumin challenge						3 % Albumin challenge				
time (min)	0.5	1	3	5	10	0.5	1	3	5	10
<i>S. aureus</i>	8.02±0.29	8.02±0.29	8.02±0.29	8.02±0.29	8.02±0.29	7.55±0.36	7.55±0.36	7.55±0.36	7.55±0.36	7.55±0.36
<i>P. aeruginosa</i>	8.70±0.65	8.70±0.65	8.70±0.65	8.70±0.65	8.70±0.65	8.61±0.16	8.61±0.16	8.61±0.16	8.61±0.16	8.61±0.16
<i>E. coli</i>	8.13±0.16	8.13±0.16	8.13±0.16	8.13±0.16	8.13±0.16	8.55±0.36	8.55±0.36	8.55±0.36	8.55±0.36	8.55±0.36
<i>E. faecium</i>	7.42±0.19	7.42±0.19	7.42±0.19	7.42±0.19	7.42±0.19	7.67±0.21	7.67±0.21	7.67±0.21	7.67±0.21	7.67±0.21
<i>C. albicans</i>	7.13±0.40	7.13±0.40	7.13±0.40	7.13±0.40	7.13±0.40	6.74±0.26	6.74±0.26	6.74±0.26	6.74±0.26	6.74±0.26
<i>Povidone-iodine (PVP-I)</i>										
0.3 % Albumin challenge						3 % Albumin challenge				
time (min)	0.5	1	3	5	10	0.5	1	3	5	10
<i>S. aureus</i>	8.02±0.29	8.02±0.29	8.02±0.29	8.02±0.29	8.02±0.29	7.93±0.34	7.93±0.34	7.93±0.34	7.93±0.34	7.93±0.34
<i>P. aeruginosa</i>	8.69±0.65	8.69±0.65	8.69±0.65	8.69±0.65	8.69±0.65	8.61±0.16	8.61±0.16	8.61±0.16	8.61±0.16	8.61±0.16
<i>E. coli</i>	8.18±0.22	8.18±0.22	8.18±0.22	8.18±0.22	8.18±0.22	8.51±0.34	8.51±0.34	8.51±0.34	8.51±0.34	8.51±0.34
<i>E. faecium</i>	7.42±0.19	7.42±0.19	7.42±0.19	7.42±0.19	7.42±0.19	7.67±0.21	7.67±0.21	7.67±0.21	7.67±0.21	7.67±0.21
<i>C. albicans</i>	7.13±0.40	7.13±0.40	7.13±0.40	7.13±0.40	7.13±0.40	6.74±0.26	6.74±0.26	6.74±0.26	6.74±0.26	6.74±0.26
<i>Polyhexanide (PHMB)</i>										
0.3 % Albumin challenge						3 % Albumin challenge				
time (min)	0.5	1	3	5	10	0.5	1	3	5	10
<i>S. aureus</i>	5.19±0.79	7.22±1.09	8.23±0.20	8.23±0.20	8.23±0.20	3.35±0.73	4.10±1.32	6.92±1.35	7.08±1.09	7.93±0.34
<i>P. aeruginosa</i>	6.89±1.31	7.28±0.95	8.41±0.44	8.41±0.44	8.41±0.44	5.90±1.49	6.86±0.99	8.61±0.16	8.61±0.16	8.61±0.16
<i>E. coli</i>	5.26±1.43	5.52±1.35	6.81±1.28	6.96±1.13	7.31±0.78	5.67±1.55	6.12±1.32	6.60±1.20	6.92±1.06	7.75±1.00
<i>E. faecium</i>	4.88±1.48	5.20±1.33	6.72±0.73	7.42±0.19	7.42±0.19	4.55±0.07	5.55±0.07	7.67±0.21	7.67±0.21	7.67±0.21
<i>C. albicans</i>	3.35±0.27	4.50±0.21	5.87±0.62	7.13±0.40	7.13±0.40	2.62±0.19	3.82±1.16	3.65±1.24	5.11±0.74	6.25±0.37
<i>Chlorhexidine (CHX)</i>										
0.3 % Albumin challenge						3 % Albumin challenge				
time (min)	0.5	1	3	5	10	0.5	1	3	5	10
<i>S. aureus</i>	4.65±0.56	5.17±0.39	6.16±0.72	7.06±0.62	7.22±0.45	3.31±0.08	4.90±0.04	5.95±1.12	6.16±1.02	7.33±0.45
<i>P. aeruginosa</i>	6.22±0.35	8.70±0.65	8.70±0.65	8.70±0.65	8.70±0.65	5.73±0.58	8.99±0.31	8.99±0.31	8.99±0.31	8.99±0.31
<i>E. coli</i>	8.13±0.16	8.13±0.16	8.13±0.16	8.13±0.16	8.13±0.16	8.45±0.31	8.45±0.31	8.45±0.31	8.45±0.31	8.45±0.31
<i>E. faecium</i>	3.30±0.33	4.44±0.65	6.58±0.86	7.42±0.19	7.42±0.19	3.66±0.27	4.33±0.10	6.85±0.82	7.69±0.24	7.69±0.24
<i>C. albicans</i>	3.03±0.43	4.40±1.00	5.91±0.79	6.08±0.63	6.53±0.24	4.64±0.75	5.44±0.36	6.74±0.26	6.74±0.26	6.74±0.26

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<i>Cetylpyridinium-chloride (CPC)</i>										
	0.3 % Albumin challenge					3 % Albumin challenge				
time (min)	0.5	1	3	5	10	0.5	1	3	5	10
<i>S. aureus</i>	8.02±0.29	8.02±0.29	8.02±0.29	8.02±0.29	8.02±0.29	7.87±0.31	7.87±0.31	7.87±0.31	7.87±0.31	7.87±0.31
<i>P. aeruginosa</i>	8.41±0.44	8.41±0.44	8.41±0.44	8.41±0.44	8.41±0.44	8.16±0.57	8.71±0.13	8.71±0.13	8.71±0.13	8.71±0.13
<i>E. coli</i>	8.26±0.03	8.26±0.03	8.26±0.03	8.26±0.03	8.26±0.03	8.62±0.23	8.62±0.23	8.62±0.23	8.62±0.23	8.62±0.23
<i>E. faecium</i>	7.42±0.19	7.42±0.19	7.42±0.19	7.42±0.19	7.42±0.19	7.38±0.07	7.38±0.07	7.38±0.07	7.38±0.07	7.38±0.07
<i>C. albicans</i>	6.37±0.36	7.13±0.40	7.13±0.40	7.13±0.40	7.13±0.40	6.31±0.43	6.31±0.43	6.31±0.43	6.31±0.43	6.31±0.43

  

<i>Miramistin (MST)</i>										
	0.3 % Albumin challenge					3 % Albumin challenge				
time (min)	0.5	1	3	5	10	0.5	1	3	5	10
<i>S. aureus</i>	6.57±1.55	7.53±0.61	8.13±0.21	8.13±0.21	8.13±0.21	4.43±0.96	6.49±0.79	7.75±0.33	7.75±0.33	7.75±0.33
<i>P. aeruginosa</i>	6.75±1.05	6.93±0.97	6.79±1.30	8.41±0.44	8.41±0.44	6.95±0.55	8.99±0.31	8.99±0.31	8.99±0.31	8.99±0.31
<i>E. coli</i>	8.26±0.03	8.26±0.03	8.26±0.03	8.26±0.03	8.26±0.03	8.57±0.27	8.57±0.27	8.57±0.27	8.57±0.27	8.57±0.27
<i>E. faecium</i>	7.42±0.19	7.42±0.19	7.42±0.19	7.42±0.19	7.42±0.19	7.38±0.12	7.38±0.12	7.38±0.12	7.38±0.12	7.38±0.12
<i>C. albicans</i>	5.30±1.39	5.86±0.84	7.13±0.40	7.13±0.40	7.13±0.40	4.95±0.89	5.43±0.43	6.31±0.43	6.31±0.43	6.31±0.43



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