



Evaluation of antimicrobial efficacy of Airlite product

The tests were performed in the lab of Prof. Daniela Uccelletti

The following bacterial strains were tested:

Staphylococcus aureus MRSA

Pseudomonas aeruginosa

Enterococcus faecalis

Listeria monocytogenes

Bacillus cereus

Klebsiella pneumoniae

Acinetobacter baumannii

Streptococcus agalactiae

Serratia marcescens

Salmonella *tiphymurium*

The Test Method was based on JIS Z 2801:2000 with minor modifications:

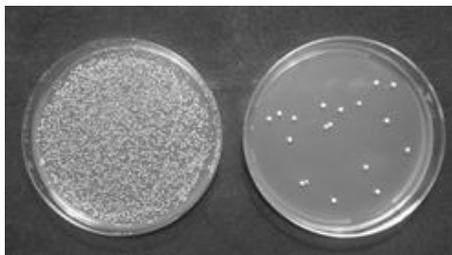
1. Test pieces (size 5X5 cm) were UV filter sterilized for 1 hour.
2. 700 μ l of sterilized H₂O_{dd} were added to the pieces, evenly distributed with a small roller (in e.g. Pasteur pipette) and allowed to dry.
3. Then 400 μ l of bacterial cells suspended in 1:500 dilution of the culture medium were added to the pieces and distributed as in step 2.
4. Pieces were then incubated at 25 °C for 0 (control) 2 or 4 hours in the dark or under TRUE- LIGHT® exposition at about 90 cm distance.
5. After the incubation period each piece was transferred in a sterile bag and the bacterial cells extracted with 10 ml of sterilized H₂O_{dd} and the suspension transferred in a sterile tube.
6. Different dilutions of the suspensions were either spotted or plated on the growth medium and incubated for 16 hours at 37 °C.

Each strain was tested in triplicate in the dark and the percentage of reduction was expressed referred to time 0 from the inoculum and the results reported in the following table. Identical results were obtained when the samples were exposed to light for the same time of period.



Strains	% Reduction	
	2 hrs	4 hrs
<i>Staphylococcus aureus</i> ATCC 25923	99.9%	99.9%
<i>Pseudomonas aeruginosa</i> ATCC 15692	96.0%	99.9%
<i>Enterococcus faecalis</i> ATCC4352	99.5%	99.9%
<i>Listeria monocytogenes</i> ATCC 19115	98.5%	99.9%
<i>Bacillus cereus</i> ATCC 14579	99.9%	99.9%
<i>Klebsiella pneumoniae</i> ATCC13883	99.9%	99.9%
<i>Acinetobacter baumannii</i> ATCC19606	97.6%	99.9%
<i>Streptococcus agalactiae</i> ATCC13813	99.9%	99.9%
<i>Serratia marcescens</i> ATCC13813	97.3%	99.9%
<i>Salmonella typhimurium</i> ATCC29630	99.8%	99.9%

In the figure are shown the results obtained after 0 (left plate) or 2 hours postinoculum (right plate) of *Lis. monocytogenes* (left panel) and *Staph. aureus* (right panel)



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