

Certificate of Analysis

Product: Mesosilver[®]

Project: Phase II: *Pseudomonas aeruginosa*

EMSL Reference: 030318532

Experimental Design Summary:

Test survival of *Pseudomonas aeruginosa* American Type Culture Collection Strain No. 9027 in a silver colloid product (Mesosilver 20 ppm) using 2 (1 and 10%) concentrations of product as supplied. The organism was tested for survival at 4 (0, 2, 5, and 24 h) time points. A negative control (no product) was included for comparison. All tests were performed in triplicate and plated in duplicate.

Experimental Results Summary:

Pseudomonas aeruginosa at 2.0×10^6 cells ml⁻¹ was used to determine the effect of Mesosilver on bacterial survival. The results show that the product has a negative impact on the survival of *P. aeruginosa* (Tables 1 and 2). Specifically, both concentrations were successful in reducing the numbers of cells to below the level of detection within 24 hours.

Analyst _____
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Table 1. Survival of *Pseudomonas aeruginosa* ATCC 9027 inoculated at 2.0×10^6 cells ml^{-1} in the presence of 1 and 10% Mesosilver colloidal silver.

Mesosilver (%)	CFU ml^{-1}		
	2 h	5 h	24 h
0	$1.8 \times 10^6 \pm 1.5 \times 10^5$	$1.6 \times 10^6 \pm 2.5 \times 10^5$	$9.3 \times 10^5 \pm 1.0 \times 10^5$
1.0	$5.4 \times 10^5 \pm 6.5 \times 10^4$	$2.3 \times 10^3 \pm 5.1 \times 10^2$	<1
10.0	$1.1 \times 10^2 \pm 4.3 \times 10^1$	<1	<1

All treatments performed in triplicate in 0.35% NaCl incubated without continuous mixing at 35°C. All plate counts performed in duplicate using nutrient agar incubated at 35°C for 72 hours. Results reported as mean \pm standard deviation. Media sterility controls showed no growth.

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Treatment	Time Point (hours)					
	2		5		24	
	Colony Count	Dilution Factor	Colony Count	Dilution Factor	Colony Count	Dilution Factor
0.35% Saline-1	178/204	10,000	155/140	10,000	83/98	10,000
0.35% Saline-2	166/160	10,000	144/136	10,000	102/105	10,000
0.35% Saline-3	166/174	10,000	176/196	10,000	75/92	10,000
1.0 % Mesosilver-1	58/40	10,000	21/22	100	0/0	1
1.0 % Mesosilver-2	49/55	10,000	22/15	100	0/0	1
1.0 % Mesosilver-3	60/63	10,000	25/32	100	0/0	1
10% Mesosilver-1	48/86	1	0/0	1	0/0	1
10% Mesosilver-2	170/136	1	0/0	1	0/0	1
10% Mesosilver-3	155/71	1	0/0	1	0/0	1

average colony count x dilution factor = colony forming units per ml