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Time Kill Study: Haemo-Sol Enzyme Active (026-055)

Haemo-Sol contracted with Nelson Laboratories based in Salt Lake City, Utah to perform a series of time kill tests on the organisms *Pseudomonas aeruginosa*, *Salmonella choleraesuis*, and *Campylobacter jejuni* using **Haemo-Sol Enzyme Active (026-055)**. These organisms can be found in the following environments and situations:

Salmonella

- Food and beverage processing facilities
- Restaurants
- Poultry farms
- Aquatic habitats where turtles, snakes, and frogs can be found (e.g., home aquariums, zoos, etc.)

Pseudomonas aeruginosa

- Food and beverage processing facilities
- Dialysis centers and catheterization labs
- Respiratory therapy equipment
- Hospitals & clinics
- Hot-tubs

Campylobacter jejuni

- Poultry farms
- Food, beverage, and dairy processing facilities
- Restaurants

Results

Results of these tests show that **Haemo-Sol Enzyme Active (026-055)** kills more than 99.99% percent of *Pseudomonas aeruginosa*, *Salmonella choleraesuis*, and *Campylobacter jejuni* (see below). Copies of the official report from Nelson Laboratories is available upon request.

Pseudomonas aeruginosa, ATCC #9027:

Identification	Exposure Intervals	Average Control Titer (CFU/mL)	Average Test Article Titer (CFU/mL)	Percent Reduction (%)	Log ₁₀ Reduction
Control	1 hour	5.1 x 10 ⁷	2.2 x 10 ⁷	58	0.37
Test Article	10 minutes	5.1 x 10 ⁷	~7.3 x 10 ¹	~99.99986	~5.84
	30 minutes		<2.0 x 10 ¹	>99.999961	>6.40
	60 minutes		<2.0 x 10 ¹	>99.999961	>6.40



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***Salmonella choleraesuis*, ATCC #6539:**

Identification	Exposure Intervals	Average Control Titer (CFU/mL)	Average Test Article Titer (CFU/mL)	Percent Reduction (%)	Log ₁₀ Reduction
Control	1 hour	9.3 x 10 ⁶	7.7 x 10 ⁶	17	0.08
Test Article	10 minutes	9.3 x 10 ⁶	7.6 x 10 ²	99.9919	4.09
	30 minutes		<2.0 x 10 ¹	>99.99979	>5.67
	60 minutes		<2.0 x 10 ¹	>99.99979	>5.67

***Campylobacter jejuni*, ATCC #29428:**

Identification	Exposure Intervals	Average Control Titer (CFU/mL)	Average Test Article Titer (CFU/mL)	Percent Reduction (%)	Log ₁₀ Reduction
Control	10 minutes	2.7 x 10 ⁷	2.2 x 10 ⁷	20	0.10
Test Article	5 minutes	2.7 x 10 ⁷	<2.0 x 10 ¹	>99.999926	>6.13
	10 minutes		<2.0 x 10 ¹	>99.999926	>6.13