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----------STUDY REPORT----------

Att: ANDREA SMITH
SILVERLAB

Report Date: 20/09/2023

DISCLAIMER:

STUDY NAME: Efficacy of **18PPM Liquid against *Escherichia coli* serotype *O157:H7* .**

TEST OUTLINE:

18ppm Liquid was submitted on 30/06/2023 (Batch number SL2707)

The aim of the study was to determine the minimum contact time required to produce at least a 5 log reduction in viable *E.coli o157:H7*.

The test was conducted in a suspension test loosely based on the method used for determination of bactericidal efficacy of chemical disinfectants EN1276. Certain deviations from the standard method had to be made to eliminate the presence of any traces of Salt (NaCl) which binds and inactivates the silver ions in the suspension.

Bacterial suspensions were prepared from overnight cultures on nutrient agar and standardised to 10^8cfu/ml in sterile distilled water using a 0.5McFarland density standard as a reference.

The test suspension was prepared with a volume of 8ml of the Ionic silver product, 1ml 3g/L bovine serum albumin to give a concentration of 0.3g/L in the final test mixture, and 1 ml of the bacterial suspension. The final ionic silver concentration in the test mixture was 14.4ppm after addition of the albumin and bacterial suspension.

The aim was to determine the minimum contact time to eliminate >5log of viable bacterial cells in the test suspension.

A 1ml portion of the test mixture was removed at time intervals of 30 Seconds, 60 seconds, 3 minutes, 5 minutes, 10 minutes and 30 minutes. The test portion was placed in a petri dish and immediately overlaid with Plate count agar containing 5g/L NaCl to bind and neutralise the Ionic Silver.

A control sample containing only distilled water instead of the Ionic silver was included as a negative control sample.

Plates were incubated at 37°C for 48 hours before interpretation.

RESULTS:

Table 1: Results. (*ND = Not Detected)

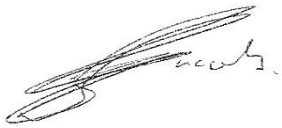
	Growth recovered at each Time Interval (Cfu/ml) (*E.coli* O157)					
Sample	30s	60s	3m	5m	10m	30m
200ml Liquid SL2707	37	0	0	0	0	0
control	$>3X10^5$	$>3X10^5$	$>3X10^5$	$>3X10^5$	$>3X10^5$	$>3X10^5$

Conclusion:

The control sample consistently yielded >300cfu on a 10^{-3} dilution from the sample, indicating a good survival rate in the control sample.

The test sample (200ml Liquid – expected 18ppm Batch no: SL2707 Exp: 06/2025 ; 14.4ppm in test suspension) eliminated all viable cells after a minimum contact time in 60 seconds.

The test sample was successful in producing a >5Log reduction in viable *E.coli* O157:H7 within 60 Seconds.



Johan Jacobs

Laboratory Manager