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## Test Report – Deltrian MPG 2021.07.30

### Evaluation of virucidal activity of citric acid treatment on $\Phi$ -6 Bacteriophage

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Test Report Deltrian MPG - Evaluation of virucidal activity on  $\Phi$ -6**A. Test method**

$\Phi$ -6 bacteriophage is an enveloped virus that is used as a meaningful surrogate for enveloped viruses such as Influenza A or SARS-CoV-2.  $\Phi$ -6 is a virus belonging to the Cystoviridae family. It typically attaches to the Type IV pilus of *Pseudomonas syringae* and this latter is therefore used for the detection of infective virions.

The modified ISO standard 10705-1:1995 has been used for the present analyses.

The principle is the following: The sample is mixed with a small volume of semisolid nutrient medium. A culture of host strain is added and plated on a solid nutrient medium. After this, incubation and reading of plates for visible plaques takes place.

For the essays, droplets of  $\Phi$ -6 phage suspension are added, dried onto the surface of test and control samples and held at room temperature for a 10 min contact time. Viral particles are collected then assayed for “viable” virus as described above.

**B. Test specimens and treatments**

All experiments have been made on PlasmaSPOT equipment with 50% aqueous citric acid solution (CAS 77-92-9).

Each experiment has been made using coupons with a size of 10 x 10 cm.

Material type and Lot number: Deltrian NWES98+ (Nanowave backing)

Sample preparation date: 23.07.2021

Sample ID	Treatment
Control for 371 and 372	No treatment / Control
371	BeCitric Acid 50% 1 m/min
372	BeCitric Acid 50% 5 m/min

Test Report Deltrian MPG - Evaluation of virucidal activity on  $\Phi$ -6**C. Test conditions and results**

In the next tables, "Samples" designate treated coupons and "Controls" designate non treated samples.

Sample ID	Test description			Results	
MPG Phi6 bacteriophage	Quantity of test organism deposited	Number of viral particles spiked (PFU/sample)	Number of viral particles recovered after contact time (PFU/sample)	Viral Load Reduction (log value)	Viral load Reduction (%)
10 min contact time					
Controls (n=3)	20 droplets x 5 $\mu$ l of $\Phi$ -6 bacteriophage	9.50E+05	6.03E+05		
371 (n=2)			2.00E+02*		
372 (n=2)			2.78E+03	2.30	99.97
				3.42	99.53

\* Result on one value because the mean could not be obtained, the duplicate was below the detection limit (<50 PFU/sample).

**D. Conclusions**

For both samples, the log reduction was above 2 units. The treatment is effective after 10 minutes.