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Aviair Sanitiser Report

Activity against SARS-CoV-2
coronavirus that causes COVID-19

Dr Zania Stamataki
Senior Lecturer in Viral Immunology



Testing Aviair sanitiser activity against SARS-CoV-2 coronavirus

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SARS-CoV-2 is the coronavirus that causes COVID-19, a disease of significant global health and financial impact. We culture SARS-CoV-2 using Vero cells under containment level 3 conditions (CL3) and measure numbers of infected cells by high content imaging. This assay is suitable to measure the activity of disinfectants.

Virus used: SARS-CoV-2 England 2

Aviair devices: 191A, SQ300, SQ400

Polypropylene tube surfaces were treated with SARS-CoV-2 at 10⁶ IU/ml and the virus removed. The tubes were then treated with tap water, tap water with added table salt (a spoonful using the measure provided) BEFORE or AFTER electrolysis with the three Aviair devices described above. 191A and SQ400 take 400ml of tap water and SQ300 takes 300ml of tap water.

We measured Total Dissolved Solids (TDS) in parts per million (PPM), pH values and chlorine content in mg/L for each solution. The disinfectants (electrolysed salt water) and controls (non-electrolysed salt water) were left on for 20, 30 or 45 seconds and removed.

Cell culture media was then added to the treated tube surfaces to recover any remaining virus. To test the presence of infectious virus, the cell culture media were incubated with monolayers of Vero cells seeded in 96-well plates, and infection was allowed to take place at 37°C for 48 hours in containment level 3 conditions. The plates were fixed and infected cells were detected by immunofluorescence staining for spike protein.

No infection was detected in culture media from surfaces treated with electrolysed salt water. Table 1 shows the results for the three Aviair devices, listing TDS, pH, chlorine content and antiviral activity of salt water mixtures before and after electrolysis.

Table 1. Aviair sanitisers kill SARS-CoV-2 after 20 seconds of treatment of infected surfaces.

	191A		SQ300		SQ400	
Electrolysis	Before	After	Before	After	Before	After
TDS (PPM)						
pH						
Chlorine (mg/L)						
Kill SARS-CoV-2	N	Y	N	Y	N	Y

Disclaimer

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Virus inactivation report

Infectious virus recovery assay

Containment Level 3 infection measured by high content imaging
Dr Zania Stamataki, Viral Immunologist



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BIRMINGHAM

Edgbaston, Birmingham,
B15 2TT, United Kingdom
www.birmingham.ac.uk