



Efficacy of Medklinn Ozone Water Sterilization System against SARS-COV-2 (COVID-19)

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Test Conducted by:

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Test Method:

Cells and viruses: -

The SARS-CoV-2 used was isolated, propagated and maintained in Vero E6 cells at TIDREC. The Vero E6 cells were cultured in DMEM (Gibco, Grand Island, NY, USA) supplemented with 10% FBS. The cells were maintained at 37°C with 5% CO₂. Virus titers were determined by microtitration using the Vero E6 cells and expressed in Plaque forming unit (PFU/mL). When cytopathic effects (CPE) were evident under the microscope, the supernatant was harvested, clarified by centrifugation, and stored at -80°C until needed.

Viral kill time assay: -

The ozone-enriched water was tested against SARS-CoV-2 using the virus plaque reduction assay. The product was tested at different ozone concentrations (1, 2, 4 and 8 ppm) at 15s and 30s contact time. The test assay comprised of 10 µL of virus suspension at concentration of 1 x 10⁴ PFU/mL and 990 µL of the ozone-enriched water. Control for this test was sterilized regular water in place of the test product. The cells were incubated for 72 hours till the CPE developed. The virucidal activity was calculated by the difference in number of plaques in virus control minus number of plaques in treated group divided to the number of plaques in virus control and multiplied by hundred to obtain percentage of reduction.

Test Results:

Virucidal activity of ozone-enriched Water

The efficacy results for the Medklinn Ozone Water Sterilization System against SARS-CoV-2 were presented in Table 1 below. The ozone-enriched water when tested at 1ppm concentration achieved 94% reduction in virus titer for a 15s exposure and 97% reduction in virus titer for a 30s exposure. The ozone-enriched water when tested at 2 ppm, 4 ppm and 8 ppm achieved 100% reduction in virus titer for a 15s exposure (Table 1). These findings suggest that the ozone-enriched water, can kill 97% of SARS-CoV-2 in 30s at 1ppm in water and kill 100% of SARS-CoV-2 in 15 seconds at 2ppm ozone concentration.

Table 1: Virucidal activity of Medklinn Ozone Water System-Generated ozone-enriched water against SARS-CoV-2

Ozone water concentration (ppm)	Contact time (Seconds) / % inhibition	
	15 sec	30 sec
1	94%	97%
2	100%	97%
4	100%	100%
8	100%	100%