

# TEST REPORT

**LABORATORY ADDRESS:**

Level 4, Block N & O, Faculty of Medicine, University of Malaya  
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**HEAD OF LABORATORY:** Sazaly Abu Bakar, Ph.D., FASc



<b>TEST REPORT NO:</b> TS4-0285		<b>DATE OF ISSUE:</b> 12/10/2020	
<b>CUSTOMER DETAILS</b>			
<b>NAME</b>		Life3 Technology Pte Ltd	
<b>ADDRESS</b>		17 Kaki Buki Place, Singapore 416195	
<b>CONTACT</b>		Dr. Steve Siaw	
<b>SAMPLE &amp; TEST INFORMATION</b>			
<b>JOB NO.</b>		TS4-0285	
<b>DATE RECEIVED</b>		02.09.2020	
<b>TEST PERFORMED</b>		22.09.2020	
<b>ENVIRONMENTAL CONDITIONS</b>		Ambient Temperature: Store below 30°C Relative Humidity: NA	
<b>TYPE OF SAMPLE</b>		Quantum-Ion® E-Series Disinfectant Sample delivered in liquid form in clear plastic bottle (500 ml) Active ingredients: Titanium Dioxide, Silver and Copper Ion Sample Colour: Translucent White	
<b>SAMPLE ID.</b>		Lot No: FRT/2020/02 MGF Date: 1/9/2020 EXP Date: 31/8/2022	
<b>TEST METHOD (TM)</b> <i>Please tick (√) at least one TM</i>		√	EN14476

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## RESULTS

### Product Suppression Assay

The product suppression assay was performed to accurately determine the activity of the test product at the given contact time. The activity was suppressed by adding cold DMEM+2% FBS, followed by serially diluting it 10-fold in cell culture medium. The suppression of product activity was assayed at 1 min exposure. Results from the suppression assay showed no difference in viral titers compared to controls (Table 1). This suggested that addition of cold media and serial dilution effectively suppresses the product activity, resulting in no reduction of the viral titers.

**Table 1: Suppression of product activity**

*Contact time (sec)	Interfering substance	Viral Titer [Control] (TCID <sub>50</sub> /ml)	Viral Titer [After product suppression] (TCID <sub>50</sub> /ml)	Difference in Viral Titre (TCID <sub>50</sub> /ml)
60	clean conditions	5.4 x 10 <sup>5</sup>	No inhibition	0.00
60	dirty conditions	5.4 x 10 <sup>5</sup>	No inhibition	0.00

\*Undiluted mixture

### Virucidal activity of Fusion Resonance Quantum-Ion<sup>®</sup> E-Series Disinfectant Spray

The Fusion Resonance Quantum-Ion<sup>®</sup> E-Series Disinfectant Spray was tested against SARS-CoV-2 in accordance to the European Standard EN14476:2013/FprA1:2015. Manifestation of virus cytopathic effects in cell culture were determined by comparing the study product-treated groups against that of the water - treated controls. The SARS-CoV-2 titer in the control-treated samples under clean and dirty conditions, respectively, were at 5.42 x 10<sup>5</sup> TCID<sub>50</sub>/ml. The Fusion Resonance Quantum-Ion<sup>®</sup> E-Series Disinfectant Spray when tested neat achieved >5 log<sub>10</sub> reduction in viral titers when exposed for 1min, 5min and 10min under both clean and dirty condition (Table 2).

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**Table 2: Virucidal activity of Fusion Resonance Quantum-Ion® E-Series Disinfectant Spray against SARS-CoV- 2**

Virus	The Fusion Resonance Quantum-Ion® E-Series Disinfectant Spray	Log <sub>10</sub> Reduction in viral titers compared to control					
		Clean Condition			Dirty Condition		
SARS-CoV-2	Undiluted	1min	3min	10min	1min	3min	10min
		>5.00	>5.00	>5.00	>5.00	>5.00	>5.00

## SUMMARY

The virucidal efficacy of The Fusion Resonance Quantum-Ion® E-Series Disinfectant Spray was tested against SARS-CoV-2 in a suspension assay following the European Standard EN144762013/FprA1:2015 protocol. The Fusion Resonance Quantum-Ion® E-Series Disinfectant Spray when tested undiluted demonstrated potent and rapid virucidal activity of  $\geq 5$  log<sub>10</sub> reduction of SARS-CoV-2 viral titer in 1 min in both clean and dirty conditions. The Fusion Resonance Quantum-Ion® E-Series Disinfectant Spray, hence, can kill 99.99% SARS-CoV-2.

PREPARED BY:	APPROVED BY:
 <hr/> <b>Name:</b> Pouya Hassandarvish <b>Position:</b> Postdoctoral Research Fellow  <b>Date:</b> October 09, 2020	 <hr/> <b>Approved Signatory(ies):</b> Sazaly Abu Bakar, Ph.D., FASc Teoh Boon Teong, Ph.D. Juraina Abd Jamil, MMedSc <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  <b>Date:</b> October 09, 2020

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