

<b>STULV20AA1474-1</b>	<b>Measurement of antiviral activity of PHOEBE treated surface after activation by means of visible light</b>		
<b>SPONSOR</b>	COLOROBRIA Consulting Srl		
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<b>REFERENCE TEST METHOD</b>	ISO 21702:2019 - Measurement of antiviral activity on plastics and other non-porous surfaces (method modified for the specific type and size of surface and process)		
<b>TEST ITEM</b>			
<b>PRODUCT NAME</b>	PHOEBE filter		
<b>MATRIX OF THE PRODUCT</b>	treated ceramic surface		
<b>BATCH</b>	Not applicable	<b>CODE</b>	MTNT000012
<b>MANUFACTURING DATE</b>	Not applicable	<b>EXPIRY DATE</b>	Not applicable
<b>MANUFACTURER</b>	COLOROBRIA Consulting Srl		
<b>ACTIVE INGREDIENT</b>	Colorobbia Photocatalyst		
<b>MATERIAL ITEM ALIQUOT</b>	LV-MAT-FOV7-20-101-0877:a		
<b>PARCEL REGISTRATION N.</b>	IP-LV-2020101-AEJ	<b>RECEIVING DATE</b>	April 10 <sup>th</sup> 2020
<b>STORAGE CONDITIONS</b>	Room temperature		
<b>ANALYSIS STARTING DATE</b>	May 27 <sup>th</sup> 2020	<b>ANALYSIS ENDING DATE</b>	June 01 <sup>st</sup> 2020
<b>EXPERIMENTAL CONDITIONS</b>			
<b>TEST TEMPERATURE</b>	Room temperature (25±1°C) at ≥90%RH		
<b>SPECIMEN DESCRIPTION</b>	2x6 cm specimen		
<b>VIRAL INOCULUM</b>	400 µl of viral inoculum with known viral titre - were applied onto each specimen evenly distributed. The inoculum was left adsorbing and drying onto the porous ceramic specimen at room temperature and under biosafety hood.		
<b>PRODUCT APPLICATION</b>	Visible light LEDs are switched on in order to activate the treated surface in the spectra range of wave length from 400 to 600nm		
<b>VOLUME APPLIED</b>	NA		
<b>CONTACT TIME</b>	4 hours (±5 minutes)		
<b>INACTIVATION OF PRODUCT RESIDUES</b>	Dilution-neutralization in cell culture medium (no detoxification needed)		
<b>INCUBATION TEMPERATURE</b>	37°C ± 1°C (with 5% CO <sub>2</sub> )		

TEST VIRUS	<i>Bovine Coronavirus (BCoV)</i> - strain S379 Riems
CELL LINE	PT cells ( <i>Ovis aries</i> ). Code: CCLV-RIE 11
VALIDITY AND EFFICACY CRITERIA	<p><b>Check of cytotoxicity of the test item</b> The test item was not cytotoxic, i.e. its contribution in terms of CPE was not visible in the test.</p> <p><b>Assay of viral infectivity (virus titration)</b> The minimum titre of the starting viral suspension was sufficiently high to at least enable a theoretical viral titre reduction of 4 LogTCID<sub>50</sub>.</p> <p><b>Check of viral recovery (untreated and treated surface)</b> The dose of infectious particles recovered immediately after inoculation from the untreated test specimens was within the range of 5 to 6LogTCID<sub>50</sub>. The dose of infectious particles recovered from each untreated test specimen after contacting for 24 h was not higher than 3LogTCID<sub>50</sub>.</p> <p><b>Check of host cells susceptibility to virus and suppression of antiviral activity (neutralization)</b> The difference of the average value of TCID<sub>50</sub> among the cellular cultures treated with the treated samples or untreated samples and then with the viral inoculum and the ones treated only with the viral inoculum (negative control) was ≤ 0.5 LogTCID<sub>50</sub>.</p> <p><b>Accuracy of virus control among the three replicas</b> The maximum difference of the value of TCID<sub>50</sub> among the cellular cultures treated with the viral inoculum recovered from the 3 different untreated specimen was ≤ 0.5 Log.</p> <p><b>Antiviral efficacy</b> The LogTCID<sub>50</sub> reduction factor (R) was calculated as per ISO 21702 :2019 standard, i.e. subtracting the average LogTCID<sub>50</sub> of treated specimen (A<sub>t</sub>) from the average LogTCID<sub>50</sub> of untreated specimen (U<sub>t</sub>) at the chosen contact time (4 hours). The LogTCID<sub>50</sub> was calculated by the Spearman-Kärber method.</p> <p>Bovine coronavirus is used as a surrogate virus for SARS-related viruses as it belongs to the same Betacoronavirus 1 genus and showed similar susceptibility to WHO formulations in published studies.</p>

<b>Cytotoxicity</b>		
<b>RESULTS</b>	PT cells ( <i>Ovis aries</i> ) cell destruction <span style="float: right;">≤0.50 (Log)</span>	
	<b>Log reductions at the different contact times</b>	
	<i>Bovine coronavirus (Betacoronavirus 1)</i>	<b>4 hours</b>
		<b>Average</b>
		≥3.22±0.200 (Log) ≥99.9%
	<b>See Annex N.1 for the detail of the test results</b>	
<b>CONCLUSIONS</b>	<b>The antiviral treatment causes a complete viral titre reduction after 4 hours of contact time in the adopted test conditions.</b>	
<b>ANNEX</b>	N. 1: RAW DATA ELABORATION	
<b>TEST FACILITY MANAGER</b>	<i>McCarroll</i> 16/06/20	

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