Public Health England

SARS-CoV-2 Inactivation Testing: Interim Report

Report identifier	HCM/CoV2/057/v1
Report date	10 November 2020
Undertaken by High Containment Microbiology, NIS Laboratories, National Infection Service, Public Health England N.B. This is an interim report and may be updated as further results are obtained	

Product/treatment details	
Product/treatment	virusPHIX-CU
Manufacturer	Rapid Labs/RNAssist
Product code	RD-VCU-50
Manufacturer's recommended ratio of sample to product	Swab samples: swab to be added directly to tube containing 1ml product. Saliva samples: 1 volume saliva to be added to 3 volumes product

Sample details	
Sample type tested	Tissue culture fluid containing 5% (v/v) foetal calf serum
Virus strain tested	SARS-CoV-2 England 2
Ratio of spiked virus stock to sample matrix	Not applicable; tissue culture fluid used undiluted

Interim report: Experiments ongoing

Experimental conditions	
Ratio of sample to product tested	1 volume sample to 3 volumes product
Contact time/s	10 minutes; 30 minutes
Temperature of incubation	Room temperature
Brief description of tests performed	Triplicate samples were treated with test buffer for indicated contact time/s or mock-treated in triplicate with an equivalent volume of PBS. Purified samples were immediately titrated on Vero E6 cells to establish virus titre. This test is quantitative and reports the titre of virus in each treatment condition in TCID50 per ml. Reduction in virus titre following treatment is given as the difference between the mean log_{10} TCID50/ml for treated conditions and the PBS control.

Table of results		
	Mean virus titre in log_{10} TCID50/ml [95% confidence interval]	Titre reduction in log_{10} TCID50/ml [95% confidence interval]
PBS-treated	6.0 [5.6-6.3]	-
Test buffer-treated (10 minutes)	5.4 [5.1-5.7]	0.6 [0.1-1.0]
Test buffer-treated (30 minutes)	5.0 [4.7-5.2]	1.0 [0.6-1.4]

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Interpretation

Treatment with virusPHIX-CU reduced SARS-CoV-2 titre by 0.6 and 1.0 $\log_{10}$ TCID50/ml after 10 and 30 minutes, respectively.

These titre reductions are modest in comparison with other extraction buffers. While this product may have a small effect on sample infectivity, it should not be relied upon to inactivate infectious samples.

This test has been performed using tissue culture fluid. The effectiveness of this treatment against SARS-CoV-2 may vary when used to inactivate clinical samples or other types of sample matrix. Any results of inactivation testing using other sample matrices will be released as they become available.

Inactivation reagents should not be assumed to be 100% effective against SARS-CoV-2.

Suitability of products and treatments for inactivation of other pathogens has not been evaluated in this study.

All COVID-19 laboratory testing workflows must be subjected to suitable and sufficient risk assessment, with consideration given to any inactivation step. Risk assessments should be reviewed regularly as new information on the inactivation of SARS-CoV-2 becomes available.

The impact of chosen inactivation method on the sensitivity of subsequent SARS-CoV-2 detection should also be assessed locally.

Interim report: Experiments ongoing

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Summary of revisions
Version 1: New document

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