Wellisair
Air disinfection performance

Wellisair: Efficiency against Coxackievirus B5

Virus test report (nº 20180711): July 11th, 2018 Laboratory of virus contaminants of water and food from the University of Barcelona

Scope: measure the effectiveness of Wellisair for the surface disinfection of Coxsakievirus B5 (CBV5), enterovirus associated to important pathologies in humans as hand, foot and mouth disease and infections of the central nervous system.

Procedure: the Wellisair was located in one box into a safety cabinet at room temperature with twelve pieces of glass contaminated with 100µl viral suspension per sample.
For the experiments with dried viruses, the glass pieces were flow dried for 1 hour at the safety cabinet before the disinfection experiment.
All tests were done with three replicates per each treatment time and conditions and the viral particles was quantified by plaque forming units (PFU).


Results:

Inactivation of CVB5 in WET suspensions			
	No treatment	Wellisair Treatment	
Time	Viruses (PFU/ml)	Viruses (PFU/ml)	Reduction (%)
0 min	$3{,}80\times10^{8}$	$3{,}80\times10^{8}$	-
30 min	$4{,}10\times10^{7}$	$2{,}42\times10^{7}$	40,97
1h	$1{,}33\times10^{7}$	$2{,}78\times10^{6}$	79,09
2h	$2{,}17\times10^{6}$	$7{,}67\times10^{1}$	99,99
4h	$5{,}27\times10^{5}$	Non detected	>99,999

Inactivation of CVB5 in DRIED suspensions (first test)			
	No treatment	Wellisair Treatment	
Time	Viruses (PFU/ml)	Viruses (PFU/ml)	Reduction (%)
0 min	$9{,}87\times10^{5}$	$9{,}87\times10^{5}$	-
30 min	$1{,}67\times10^{5}$	$1{,}00\times10^{4}$	94,01
1h	$1{,}23\times10^{5}$	$1{,}07\times10^{4}$	91,30
2h	$4{,}47\times10^{4}$	$5{,}47\times10^{2}$	98,77
4h	$1{,}20\times10^{4}$	$6{,}90\times10^{1}$	99,42

Inactivation of CVB5 in DRIED suspensions (second test)			
	No treatment	Wellisair Treatment	
Time	Viruses (PFU/ml)	Viruses (PFU/ml)	Reduction (%)
0 min	$1{,}53\times10^{6}$	$1{,}53\times10^{6}$	-
2h	$4{,}77\times10^{5}$	$2{,}97\times10^{3}$	99,39
4h	$2{,}27\times10^{5}$	$1{,}97\times10^{1}$	99,99

Conclusions: Wellisair air disinfection purifier reduced the numbers of CVB5 infectious surface viruses higher that 99,99% after 2 hours of treatment and more than 99,999% after 4 hours.
The reduction of numbers of CVB5 infectious viruses for dried glass surfaces were between 99,42 and 99,99% after 4 hours.