


Certificate of Testing

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Contents of request	Virus inactivation test			
Name of product	██████████ UV one-kill multi-disinfectant			
Test Virus	Feline coronavirus (FCV)	Cell line	CRFK cell	
Test code	20D113	Test period	Feb. 25 ~ Mar. 02, 2020 (6 d)	
Test condition	-. Liquid type: 20ul virus was dropped on each of two 10mm diameter hole of a slide glass (hole depth 0.6mm, slide thickness 1mm) -. Dried type: 20ul of liquid type virus was dried out		Virus Carrier	The slide glass carrying viruses was bound on a mobile phone with 11mm height and passed through CLEAN BUNKER(ULS-10)
Number of uses	0, 1, 3 & 5 uses (7sec curing time/uses, i.e, 7sec UV exposure)		Virus titration	CPE/MTT assay (also microscopic observation)
Test temperature	Room temperature (approx. 23°C)		Test participant	Chong-Kyo Lee

Results

Virus		UV lamp distance	Virus reduction (log)			Virus Reduction (%)		
Name	Type		UV one-kill multi-disinfectant Usage Times			UV one-kill multi-disinfectant Usage Times		
			0 sec	10 sec	30 sec	0 sec	10 sec	30 sec
FCV	Liquid	11 mm	0.00	2.95	>5.20	0%	99.887%	>99.999%
FCV	Dry	11 mm	0.00	3.98	>4.46	0%	99.989%	>99.997%

* Conclusion: Does have virus inactivation ability against the feline coronavirus

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Test manager: Chong-Kyo Lee, Ph.D. (Signature)

Appendix: Detailed results

Table 1. Virus titers and virus reduction rates (log values)

Virus		UV lamp distance	Virus titers (log CCID50)			Virus reduction (log)		
Name	Type		UV one-kill multi-disinfectant Usage Times			UV one-kill multi-disinfectant Usage Times		
			0 sec	10 sec	30 sec	0 sec	10 sec	30 sec
FCV	Liquid	11 mm	5.98	3.03	<0.78	0.00	2.95	>5.20
FCV	Dry	11 mm	5.24	1.26	<0.78	0.00	3.98	>4.46

Table 2. Virus titers (CCID₅₀/well) and virus reduction rates (%)

Virus		UV lamp distance	Virus titers (CCID50)			Virus Reduction (%)		
Name	Type		UV one-kill multi-disinfectant Usage Times			UV one-kill multi-disinfectant Usage Times		
			0 sec	10 sec	30 sec	0 sec	10 sec	30 sec
FCV	Liquid	11 mm	949,059	1,074	<6.0	0%	99.887%	>99.9994%
FCV	Dry	11 mm	173,988	18	<6.0	0%	99.989%	>99.997%