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## NOTE OF CERTIFICATION

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DATE: 18 February 2020

This note serves to certify the following:

1. We have tested the solution **Quantum-Ion** under laboratory conditions and found that **Quantum-Ion** was 99.99% efficient in degrading the human coronavirus OC43 (CoV-OC43) and viral RNA when exposed to direct contact with the virus.



Professor Dr David Perera  
Director



## Final report: Evaluation of Quantum-Ion solution effects on Coronavirus 043 (CoV-O43)

### Experimental design

1. Experimental parameters:

Light source	White/visible light
Contact times	5, 60 minutes
Test virus	CoV-O43
Virus infectious dose	10 <sup>4</sup> pfu/ml

2. The following experimental conditions were evaluated in triplicate separately for both contact times:

- Virus + Solution II + white/visible light
- Virus + white/visible light
- Untreated positive control
- No virus (negative) control

3. All treatments would be subjected to viral nucleotide extraction and a pan-CoV RT-PCR assay (Vijgen et al., 2008) immediately after the exposure. The expected positive PCR product size is 251 bp.

### Summary of pan-CoV RT-PCR results

Virus	Experimental condition			
	Exposure: 5 min		Exposure: 60 min	
	Virus + Solution II + white/visible light	Virus + white/visible light	Virus + Solution II + white/visible light	Virus + white/visible light
CoV-O43	Negative	Positive	Negative	Positive

### Conclusion

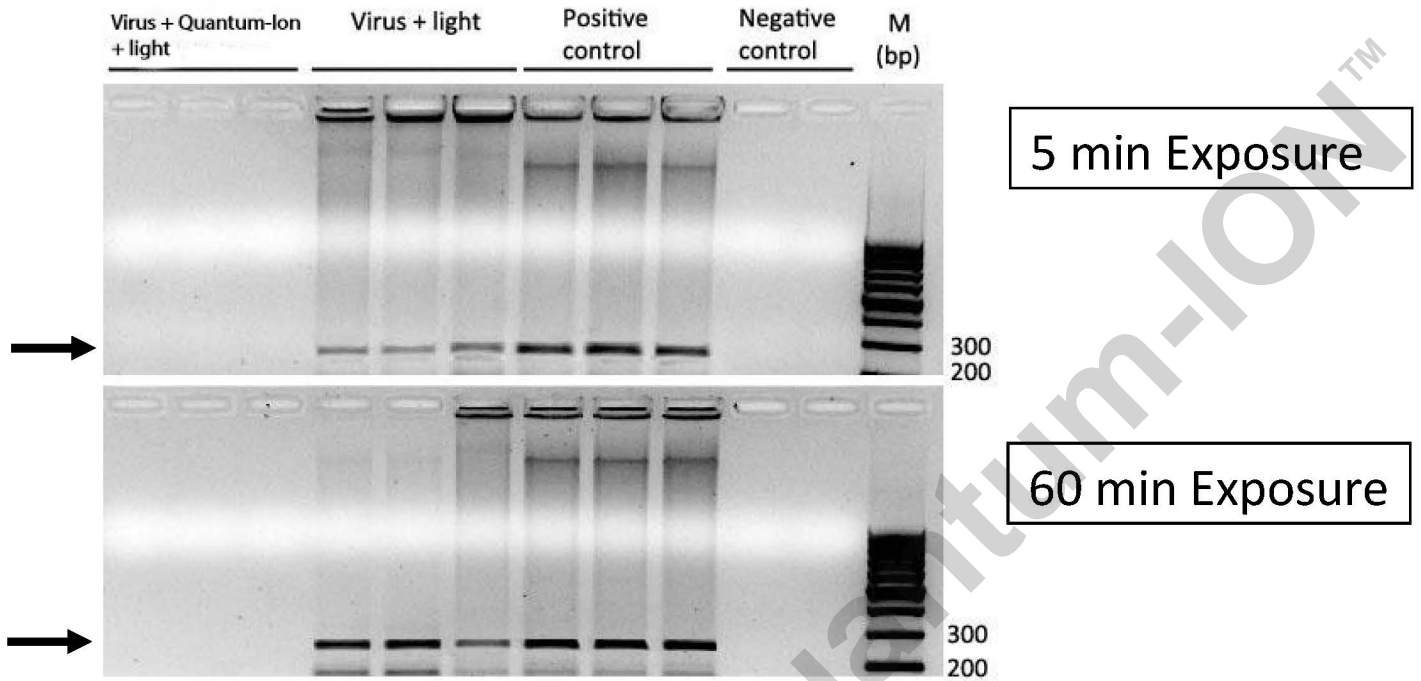
Quantum-Ion degrades the CoV virus and viral RNA under the experimental conditions evaluated.

### References

- Vijgen L, Moës E, Keyaerts E, Li S, Van Ranst M (2008). A pancoronavirus RT-PCR assay for detection of all known coronaviruses. *Methods Mol Biol.* 454:3-12



**Detailed results: Gel electrophoresis images**



M, size marker. Arrow on the left denotes positive PCR amplicon

Report prepared by:

Date: 17 Feb 2020



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