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Contract Research report: Part 1 FR board

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Date of report:	18th August 2020
Project Aim:	Testing the viability of a SARS-CoV-2 representative virus on partition material: Human coronavirus 229E

1. Is viable virus still detectable on the surface of the FR board after 1 and 4 hours?

1.1 Experimental procedure:

- 9 different pieces of FR board were placed inside a biological safety cabinet.
- Media containing human coronavirus 229E (3.5 x 10^7 PFU minimum) was added to the surface by a pipette.
- 3 of the boards were swabbed immediately to act as positive control to demonstrate that viable virus could be removed using the swabbing technique.
- 3 of the boards were left for 1 hour before the surfaces were swabbed.
- 3 of the boards were left for 4 hours before the surfaces were swabbed.
- After swabbing, the boards were placed directly into virus transport media for further analysis of virus inside the boards (see section 3.1). Media/virus was removed from the swabs and placed in a sterile cryovial and frozen until analysis.

1.2 Assessment of viable virus

- Media from the swabs was added to prepared cell monolayers in tissue culture plates, diluted across the plates and incubated at 35°C with 5% CO_2 for 5 days to allow the virus to grow inside the cells.
- An immunoassay specific for a coronavirus 229E antigen was carried out on day 5 to assess each sample for viable/replicating virus.

1.3 Results

- Viable virus was detected on all 3 positive control boards, demonstrating that the swabbing technique was a feasible method for virus detection on the surface of the boards.
- **No viable virus was detected** on the surface any of the boards from either **1- or 4-hours** post-application.

2. Is viable virus still detectable on the surface of the FR board after 30, 15 or 5 minutes?

2.1 Experimental procedure:

- Experimental procedure was the same as section 1.1, other than 3 boards were left for 30 minutes, 3 were left for 15 minutes, and 3 were left for 5 minutes before swabbing.

2.2 Assessment of viable virus

- See section 1.2.

2.3 Results

- **No viable virus was detected** on any of the boards from either **30-, 15- or 5-minutes** post-application.

3. Is viable virus still detectable from inside the FR boards at any time point?

3.1 Experimental procedure

- After swabbing the board surface, the board was placed directly into virus transport media inside a tube, vortexed for 30 seconds and placed on a roller mixer for 5 minutes to allow the media to penetrate the board.
- The board was then manually broken apart and placed back on the roller mixer for a further 5 minutes for the media to reach the middle of the board, ensuring the entire board was saturated with media.
- Media/virus was removed from the tube and placed in a sterile cryovial and frozen until analysis.

3.2 Assessment of viable virus

- See section 1.2.

3.3 Results

- **No viable virus was detected** from inside the boards at any of the time points assessed (5-, 15-, 30 minutes, 1- and 4-hours)
- It was also observed that the cells that were incubated with the media from inside these boards had not grown well, did not replicate and in fact, some had died during the 5-day incubation period.

4.0 Summary of results Table:

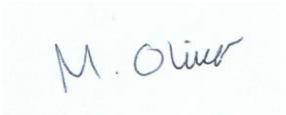
	Viable virus detected?	
	Surface	**Inside**
Positive control ('0' hours)	Yes 3/3 = **100%**	N/A
5 minutes	No 0/3 = **0%**	No 0/3 = **0%**
15 minutes	No 0/3 = **0%**	No 0/3 = **0%**
30 minutes	No 0/3 = **0%**	No 0/3 = **0%**
1 hour	No 0/3 = **0%**	No 0/3 = **0%**
4 hours	No 0/3 = **0%**	No 0/3 = **0%**

5.0 Conclusion

Using the methods described above, no viable human coronavirus strain 229E was detected from the surface or from inside the FR board from as little as 5 minutes after application of the virus to the surface.

Indoor Biotechnologies Ltd Approval

This signature below indicates that the Senior Scientist approves the Final Report.



20th August 2020

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Signature Date