

## Quality Counts

A new study by Cardiff University could help to partially explain why Covid is still so prevalent, despite all of our mask wearing, social distancing, and new hygiene routines.

The report, just released, conducted by Dr Richard Stanton a Reader within the 'Viral Immunology' group, and also the 'Cytomegalovirus and Adenovirus Virology' group, within the division of Infection & Immunity at Cardiff University, based in the Heath Hospital, Cardiff.

**It shows that even antibacterial soap and lower concentrations of hand sanitiser kills a very small number of viruses compared to a higher strength, 80% alcohol, hand sanitiser.** This confirmed a previous study by Dr Pierre Grascha<sup>1</sup>.

It is important to note that the Cardiff University test was conducted **against SARS-COV-2 viruses, and not bacteria, as typically tested. Viruses are approximately 10 times more prevalent than bacteria**<sup>2</sup> The contact time of 10 seconds used was taken, as this is found to be the average typical time taken to wash or hand sanitise your hands, in Britain.

**Covid-19 is a virus and as such tests should be measured against viruses and not bacteria. This is more realistic and relevant test as Covid-19 is a virus**

The report tested against SARS-COV-2 clearly shows, the higher strength 80% alcohol Dr Browne's hand sanitiser, is the surest way of defeating this virus on your clean hands.

As the country starts to unlock there will be more contact with services, exposure to germs generally, and less availability of hand washing facilities. Regular use of a high strength 80% hand sanitiser offers the best protection.

Potential for reducing the risk of disease transmission				
Product	Notes	Log 10 reduction	Kill rate	Viruses remaining
Control – no treatment	3 <sup>3</sup>	0	0	10,000,000,000
50% alcohol	5	1	86.87%	1,313,000,000
Simple Soap	4	1	90%	1,000,000,000
Antibacterial soap	5	2	99%	100,000,000
60% alcohol	5	3	99.9%	10,000,000
80% alcohol Dr Browne's	5	6	99.9999%	10,000

**Hence Dr Browne's 80% formula reduces the number of viruses by over 1 million times.**

<sup>1</sup> Dr Pierre Grascha PhD. *Why 99.999% is Important*. Deb Group Ltd (2009)

<sup>2</sup> AM O'Hara & F. Shanahan *The gut flora as a forgotten organ*. European Molecular Biology Organization Reports (2006)

<sup>3</sup> Saliva or Nasopharyngeal Swab Specimens for Detection of SARS-COV-2. N Engl J Med 383;13, (2020)

<sup>4</sup> C.L Cardoso, H.H Pereira, J.C Zequim and M. Guilhermetti *Effectiveness of hand cleansing agents for removing Acinetobacter baumannii strain from contaminated hands*. Am. J Infect. Control (1999)

<sup>5</sup> Dr R. Stanton & Dr K. Bentley *Dr Browne's Viricidal Activity Testing*. Cardiff University (2021)

<b>Project:</b>	Dr Browne's Virucidal Activity Testing
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<b>Date:</b>	16/03/2021

#### Project Summary:

Assessing the virucidal activity of Dr Browne's hand sanitiser against SARS-CoV-2 virus, when compared to other ethanol-based products.

#### Method:

Products were assessed following a contact time of 10 seconds with SARS-COV-2:

- Virus added to product in a 1:10 ratio and mixed thoroughly,
- Incubated for 10 seconds at room temperature,
- Virus + product mix was diluted 1:2 with cell culture media to neutralise product activity,
- 1/10<sup>th</sup> of the mix was assayed by viral plaque assay on Vero cells to quantify residual virus.
- 3 repeats of the experiment were carried out and the mean results recorded.

#### Results:

Table 1, and Figure 1 and 2 show results for products that did not result in complete inactivation of virus following the 10-second contact time when compared to Dr Browne's. Virucidal activity of products is expressed as the percentage reduction in virus infectivity when compared to a media only control, and the log<sub>10</sub> reduction when compared to a media only control i.e.

- 2-log reduction = 99%
- 3-log reduction = 99.9%
- 4-log reduction = 99.99%
- 5-log reduction = 99.999%
- 6 -log reduction = 99.9999%



Table 1- Average Results of 3 Tests

Test Product	% Reduction	Log10 Decrease
Control	0.0000%	0.00
50%	86.8712%	0.94
60%	99.9109%	3.71
Dr Browne's	≥99.9999%	≥6
Antibacterial Liquid Soap	99.8774%	2.92

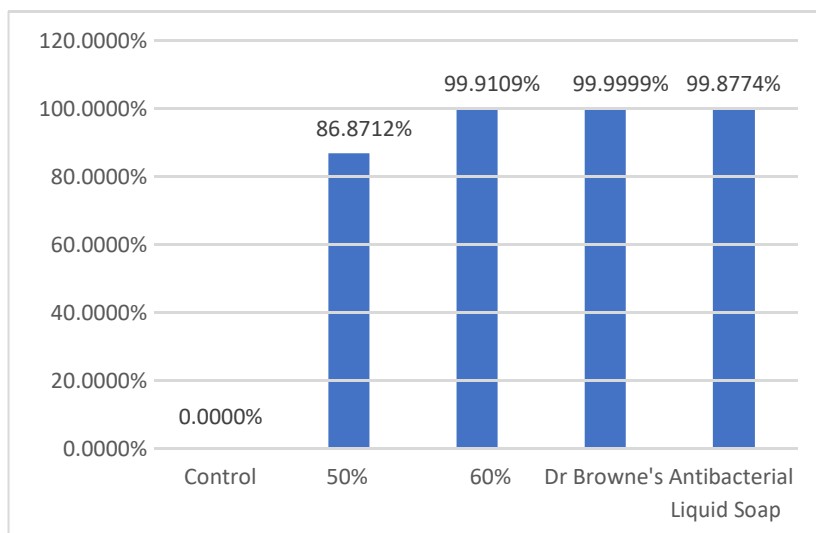


Figure 1. Percentage reduction in infectivity compared to a media only control.

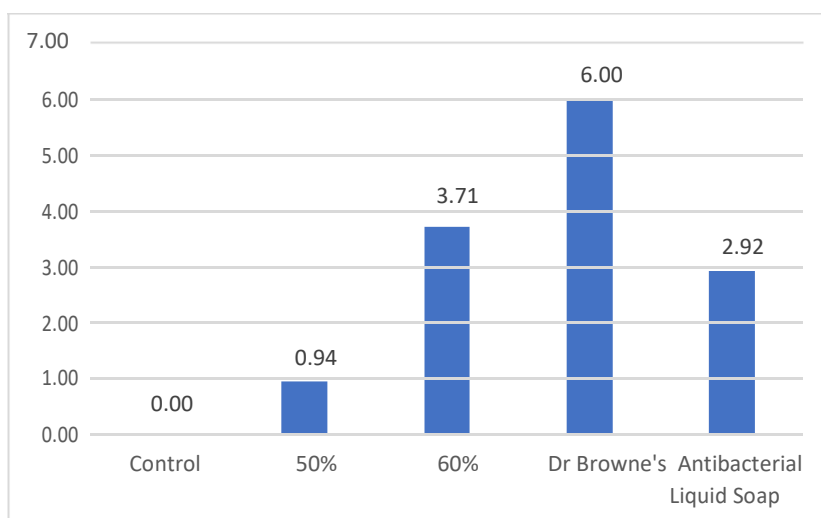


Figure 2. Log10 Reduction in infectivity compared to a media only control.

**Conclusions:**

- Dr Browne's consistently achieved at least a 6-log<sub>10</sub> reduction in virus infectivity against SARS-CoV-2 following a 10-second contact time of the product and virus.
- Dr Browne's hand sanitizer is >1.6 X more effective than sanitizers containing 60% alcohol and >2 X more effective than branded Anti-bacterial Handwash under these conditions.
- In one study, an average of 5.58 log<sub>10</sub> copies per mL of SARS-CoV-2 genomes were present in the saliva of infected patients, and the maximum seen was 10 log<sub>10</sub> copies/ml. If these genomes were all infectious virus, they could be transferred to hands when sneezing<sup>1</sup>.
- Dr Browne's hand sanitizer can reduce viral load by ≥6-log; based on the above study, this would completely inactivate live virus on the hands in the 'average' patient, preventing further spread of virus following touching.

Signature

Position

Date



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<sup>1</sup>Saliva or Nasopharyngeal Swab Specimens for Detection of SARS-CoV-2. N Engl J Med 383;13, September 24, 2020

