

Description: Testing the efficacy of chemical disinfectants and antiseptics (EN 14476)

Test Period: 30 Apr – 10 May 2020
Test Report No.: VX-TR-20-0259
Report Date: 20 May 2020
Copy No.: 1

Client Name: TEVO Creations Sdn. Bhd.
Sample Name: BerryC
Batch No.: Not specified
Sample Receipt Date: 21 Apr 2020

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4. Test method and its validation

- 4.1 Testing method: Quantal test
- 4.2 Inactivation method: Immediate dilution
Molecular sieving using MicroSpin™ S 400 HR (for formaldehyde only)

The results of validation test A, B, and C proved the viability of the method in all cases.

5. Test results

The results are stated in Tables A and B.

6. Conclusion

BerryC showed the required virus reduction of $\geq 4.0 \log_{10}$ against test strain *Human coronavirus* ATCC VR-740 in accordance with EN 14476:2013+A1:2015 (E) at 100.00 %* concentration after 1,5,10 and 30 minutes under the stated condition. According to the simple acceptance decision rule†, there is a minimal risk of false acceptance.

Kuala Lumpur, 20 May 2020

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Dr Syazani Suhaimi
Microbiologist

7. Note

Virucidal activity – the capability of a product to produce a reduction in the number of viable viruses belonging to reference strains under defined conditions by at least 4 orders (10^4).

$R = V_c/N_a$ = the reduction in viability, or $\lg R = \lg V_c - \lg N_a$

* The product can only be tested at 80.00 % concentration or less, as some dilution always occurs when test organisms and interfering substance are added.

† The decision rule applied is simple acceptance rule with no guard band and up to 50 % risk of false acceptance or rejection. This rule has been determined by the laboratory and agreed with the client prior to testing.



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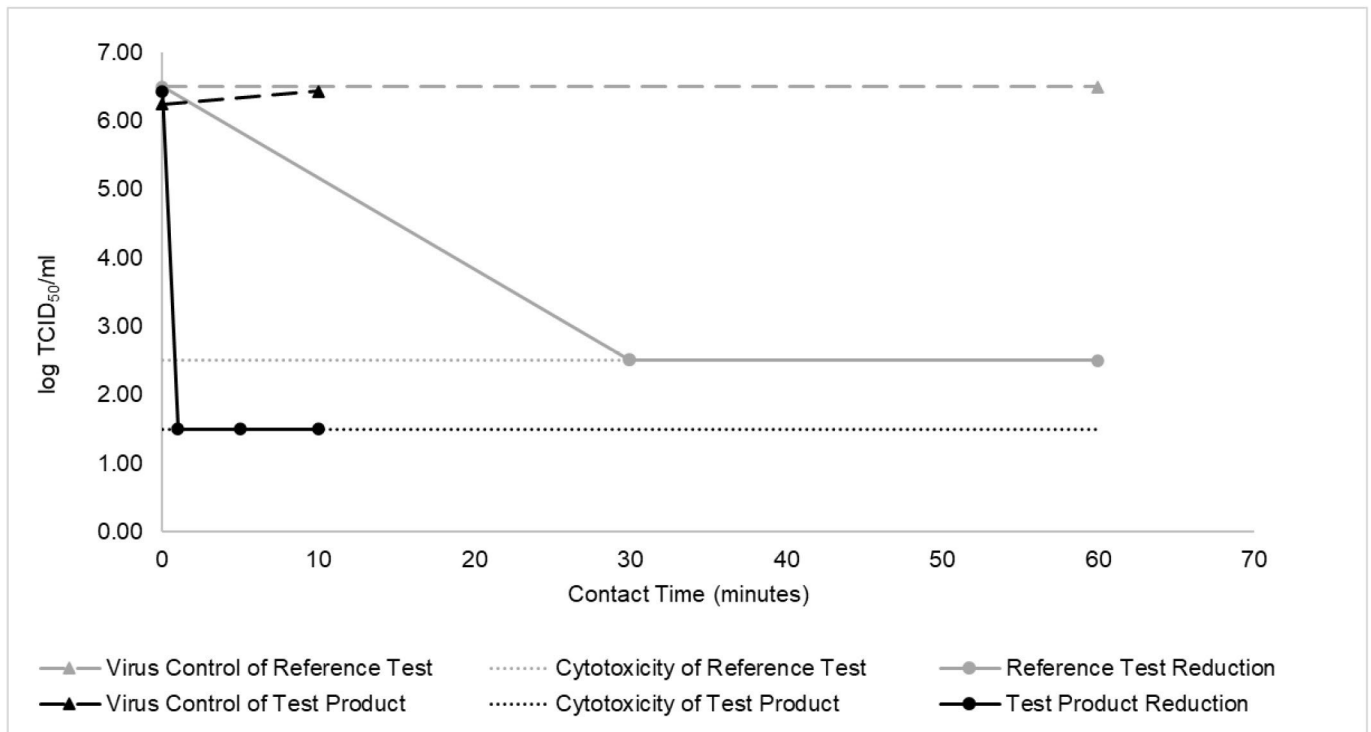
Table A: Evaluation of the virucidal activity of BerryC on test strains according to EN 14476

Product: BerryC
Loading: 0.30 g/L bovine albumin solution

Test strain: Human coronavirus ATCC VR-740

Virus control, V_C	Cytotoxicity effect, CE
V_{C1} : 6.38 ± 0.25 V_{C2} : 6.50 ± 0.00	CE_1 : 1.50 ± 0.00 CE_2 : 1.50 ± 0.00

Test concentration (%) / contact time (min)	First assay, N_{a1}	Second assay, N_{a2}	Average reduction
100.00* / 1	N_{a1} : $\leq 1.50 \pm 0.00$ $\lg R_1$: $\geq 4.88 \pm 0.25$	N_{a2} : $\leq 1.50 \pm 0.00$ $\lg R_2$: $\geq 5.00 \pm 0.00$	$\lg R$: $\geq 4.94 \pm 0.18$
100.00* / 5	N_{a1} : $\leq 1.50 \pm 0.00$ $\lg R_1$: $\geq 4.88 \pm 0.25$	N_{a2} : $\leq 1.50 \pm 0.00$ $\lg R_2$: $\geq 5.00 \pm 0.00$	$\lg R$: $\geq 4.94 \pm 0.18$
100.00* / 10	N_{a1} : $\leq 1.50 \pm 0.00$ $\lg R_1$: $\geq 4.88 \pm 0.25$	N_{a2} : $\leq 1.50 \pm 0.00$ $\lg R_2$: $\geq 5.00 \pm 0.00$	$\lg R$: $\geq 4.94 \pm 0.18$



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Efficacy of BerryC against *Human coronavirus*, strain 229E, ATCC VR-740, in a quantitative suspension test at 20 °C according to EN 14476:2013+A1:2015 (E) under clean condition

EXPERT OPINION*

This expert opinion is based on the test report VX-TR-20-0259 dated 20 May 2020.

The virucidal activity of the disinfectant BerryC of TEVO Creations Sdn. Bhd. against *Human coronavirus* ATCC VR-740 was investigated by a quantitative suspension test according to EN 14476:2013+A1:2015 (E) under clean condition (0.30 g/L bovine albumin solution).

According to this suspension test, a disinfectant or a disinfectant solution at a particular concentration is considered as having virucidal activity if the virus titre is reduced by $\geq 4 \log_{10}$ (inactivation $\geq 99.99\%$) within the recommended exposure period.

BerryC was examined at 20 °C at the concentration of 100.00 %** for the exposure times of 1,5,10 and 30 minutes. After the exposure times, the viral reduction exceeded 4 \log_{10} -steps in all assays. According to the simple acceptance decision rule†, there is a minimal risk of false acceptance. Therefore, a virucidal activity against for *Human coronavirus* ATCC VR-740 was measured as follows:

Clean condition	100.00 %**	1 minute
Clean condition	100.00 %**	5 minutes
Clean condition	100.00 %**	10 minutes
Clean condition	100.00 %**	30 minutes

Kuala Lumpur, 20 May 2020

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* Opinions and interpretations expressed here are outside the scope of SAMM (Laboratory Accreditation Scheme of Malaysia) accreditation.

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Test procedure accredited according to MS ISO/IEC 17025. The test report shall not be reproduced except in full without the written approval of the laboratory. The test result relates only to the sample stated in the test report. The above analysis is based solely on the sample submitted by the customer. Information on measurement uncertainty is available upon request.