

20th November 2020

SUMMARY OF COVID-19 TESTING:

| | |
|---------------------------|--|
| Contracted Company | Eurofins BioPharma Product Testing NZ Ltd (Eurofins ams Laboratories Pty Ltd) |
| Analysis | Virucidal Test by Carrier Method |
| Product | Citrus Multi-Purpose Cleaner CST05 ET20125-9 |
| Test Method | ASTM E1053 ¹ |
| Test Organism | MHV-1 – Murine Hepatitis Virus ² |
| Contact Time | 10 minutes |
| Test Result | Log ₁₀ Reduction of Virus after Treatment = 4.94 <i>Appendix 1. Eurofins Certificate of Analysis FQ20AA2722-2</i> |
| Interpretation | Log reduction of 4 = 99.99% reduction <i>Appendix 2. Technical Note Statement – Interpretation of Log Reduction in Microbiological Studies</i> |
| Conclusion | When used on non-porous surfaces at 10 minutes contact time, kills up to 99.99% MHV-1. |

¹ ASTM E 1053 Standard Test Method to Assess Virucidal Activity of Chemicals Intended for Disinfection of Inanimate, Nonporous Environmental Surfaces, <https://www.astm.org/Standards/E1053.htm>.

² See: Therapeutic Goods Administration TGA Australia. <https://www.tga.gov.au/surrogate-viruses-use-disinfectant-efficacy-tests-justify-claims-against-covid-19>, and various academic literature on the use of MHV-1 as a surrogate: <https://pubmed.ncbi.nlm.nih.gov/17041219/>; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7471983/>; <https://www.sciencedirect.com/science/article/pii/S004896972033480X>; <https://onlinelibrary.wiley.com/doi/10.1002/viv2.16>; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7531810/>; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7132643/>; <https://pubmed.ncbi.nlm.nih.gov/33087516/>.

Appendix 1. Eurofins Certificate of Analysis FQ20AA2722-2



Certificate of Analysis

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Analytical Report: AAJ07888

Eurofins Sample Number: FQ20AA2722-2

Version: 1

Ecostore Company Ltd t/as Eco Tech Solutions
16 Ben Lomond Drive, Pakuranga
PO Box 251 532
Pakuranga
Manukau, 2140
NZ

Client Account Number: A00603446M8K
Eurofins Quote Number: X9NBPH20005201

| Eurofins Sample Number FQ20AA2722-2 | |
|-------------------------------------|--------------------------------|
| Original Received Date: | 13-Jul-2020 |
| Description: | Multi-Purpose Cleaner - Citrus |
| Lot Number: | ET20125-9 |
| Containers Submitted: | 1 Bottle(s) |
| Client Sample ID: | CST05 |

Analysis

| |
|---|
| Virucidal Test by Carrier Method |
| Refer to Attachment # 1 |
| Method: TMCV 006, ASTM E1053 |
| Analysis Date: 23-Jul-2020 |

Supplemental Information

Specifications (if) reported are as provided by the client.
The accreditation logo on this Analytical Report relates to Eurofins BPT Testing facility.

| Eurofins BPT Testing Facility | Test |
|---|----------------------------------|
| Eurofins ams Laboratories Pty Ltd 8, Rachael Close Silverwater, NSW 2128 AUSTRALIA | Virucidal Test by Carrier Method |

| |
|---|
| Contracted Company: Eurofins BioPharma Product Testing NZ Ltd 35 O'Rorke Road, Penrose, Auckland 1061 New Zealand nzbiopharma@eurofins.com |
|---|

Medsafe GMP certificate number TT60-200-16-3
Questions about this report should be directed to your project manager or the general email listed above.

Reviewed and electronically signed for Data Reviewer Approval by
Teresa Susanto, Laboratory Manager- Sterility
for Eurofins ams Laboratories Pty Ltd, on 31-Jul-2020 20:38:07 UTC+12:00

| CONDITIONS | |
|--------------------|--|
| Virus Strain | Murine hepatitis virus (MHV) -1 ATCC/VR-261 |
| Cell Substrate | A9 cells ATCC/CCL- 1.4 |
| Test Concentration | Neat |
| Contact Time | 10 minutes |
| Test Temperature | Room temperature |
| Test Condition | Dirty 5% FBS (Fetal Bovine Serum) |
| Neutraliser | 4 cc Sephadex Gel in PBS (Phosphate Buffer Saline) |

RESULTS: TABLE 1: MHV-1 test/control results for 10 minutes contact

| Virus Dilution | Number of Inoculated Wells | Virus Control | Cytotoxicity | Neutralisation | Test Sample |
|--|----------------------------|---------------|--------------|----------------|-------------|
| 10 ⁻¹ | 4 | 4*/4 | C | C | C |
| 10 ⁻² | 4 | 4*/4 | 0*/4 | 4*/4 | 1*/4 |
| 10 ⁻³ | 4 | 4*/4 | 0*/4 | 4*/4 | 1*/4 |
| 10 ⁻⁴ | 4 | 4*/4 | N/A | N/A | 0*/4 |
| 10 ⁻⁵ | 4 | 4*/4 | N/A | N/A | 0*/4 |
| 10 ⁻⁶ | 4 | 3*/4 | N/A | N/A | 0*/4 |
| 10 ⁻⁷ | 4 | 2*/4 | N/A | N/A | N/A |
| 10 ⁻⁸ | 4 | 0*/4 | N/A | N/A | N/A |
| Log ₁₀ | - | 6.77 | 1.5 | 1.5 | 1.83 |
| Log ₁₀ Reduction of Virus after Treatment | | | | 4.94 | |

Note: Presence of virus in each response is recorded as "+"
Absence of virus in each response is recorded as "0"
Cytotoxic response is recorded as "C"
Calculated virus titre = 10^{6.77} TCID₅₀(0.1ml) (6.77 log₁₀)
Cell control - 4 wells with healthy cell monolayer

* The Reed & Muench LD50 Method was used for determining the virus titre endpoint.

CONCLUSIONS:

Considering the cytotoxicity and neutralisation test results, the sample has shown virucidal efficacy against MHV-1 by achieving 4.94 log reduction in virus concentration after 10 minutes exposure period at room temperature.

Appendix 2. Technical Note Statement – Interpretation of Log Reduction in Microbiological Studies



Technical Note Statement

Date: 24/02/2020

Subject: Interpretation of 'Log reduction' in Microbiological Studies

Microbiological test results are often presented as 'Log reductions' rather than as 'Percentage' reductions. This technical note has been prepared to indicate and clarify the association between the two.

- 1 log reduction = 90% reduction
- 2 log reduction = 99% reduction
- 3 log reduction = 99.9% reduction
- 4 log reduction = 99.99% reduction
- 5 log reduction = 99.999% reduction
- 6 log reduction = 99.9999% reduction


The formulas used for the conversion of the Log reduction to a Percentage reduction is presented below:

$$P = (1 - 10^{-L}) \times 100$$

Where:

P is the percent reduction

L is the Log reduction to be converted.

Signed:  24/02/2020
Teresa Susanto
Sterile Product Testing Manager

Signed:  24/02/2020
Fergus O'Connell
Head of Quality – Eurofins I BPT (AU/NZ)