

Test Report No. GGN/T(A)/20/015800

Dated: 2020-09-30



South Asia

Applicant : WAKAMONO CORPORATION
95 Tran Trong Cung, Tan Thuan Dong Ward, District 7,
Ho Chi Minh City, Vietnam

Attention : /

Test Sample : Received on 2020-08-10 12:37 PM

Test Period : From 2020-08-10 to 2020-09-30

Sample Description : Sample A: Medical Face Mask

Color : White (Lab Identified)

Mfg./Exp. Date : /

Sample Quantity : /

Lot No./Batch No. : /

Country Of Origin : VIETNAM

Name of the Buyer / Destination : /

Testing Standard Followed : ISO 18184:2019: Textiles — Determination of antiviral activity of textile products

Note: 1. the submitted samples are Not Drawn by the Laboratory

2. Requested tests are performed

Sample Photo



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Page 1 of 3

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Summary of Results

Sl. No.	Tests	Test Method	Specification	Observation	Conclusion
1.	Determination of Antiviral Activity of Textile Product	ISO 18184:2019	/	Refer result	Refer result

Conclusion:/

Authorized By

Rashmi Gupta
(Authorised Signatory)

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Page 2 of 3

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Test Result(s):

Determination of Antiviral Activity of Textile Product (ISO 18184:2019)#

Specimen: Material of test sample and reference: treated fabric material, and non-treated fabric control.

Size, shape, and thickness: 20 × 20 mm squares, stacked together to weigh 0.4 g.

Virus strain: Human coronavirus NL63

Cells used for TCID₅₀: Rhesus Monkey Kidney Epithelial Cells (LLCMK2 Line)

Test Inoculum: Volume: 200 µL, Titre (PFU/ml): 1 × 10⁵

Incubation times: 24 h

Deviations from the standard procedure: None

Results:

Control tests:

The treated fabric displays cytotoxicity toward the LLC-MK2 cells used to host the virus in this experiment. Because of cytotoxicity, the first dilution of the recovered media (the undiluted sample) was excluded from the infectivity control analysis. Like this we found that the treated fabric did not interfere with the host cells' sensitivity to the virus relative to the media control.

Antiviral tests:

The results of the antiviral test for the treated materials are summarized in Table 1.

The treated fabric displays virucidal activity against human coronavirus NL63 when using a contact time of 24 h, with an Mv (antiviral) value of 2.16.

These data indicate that the treated fabric inactivates > 99% of the virus within 24 h of contact.

Table 1. The average infectious units per cm² recovered from the treated and non-treated materials at a contact time 24 h against human coronavirus NL63.

Test	Virus recovery control (TCID ₅₀ /cm ²)	Antiviral test (TCID ₅₀ /cm ²)	Antiviral Activity Value Mv = Ig(Ut)-lg(At)	Viral Activity Reduction (%)
Treated specimen	NA	2.11E+02 ± 1.04E+02	2.16	>99
Non-Treated specimen	3.85E+04 ± 1.50E+04	5.48E+04 ± 4.27E+04	--	--
Media	NA	5.84E+05 ± 2.52E+05	--	--

Note:

Mv: The antiviral activity value

Ig (Ut): The average of the common logarithm of the number of infectious units recovered from the untreated test specimens at the end of the incubation time;

Lg (At): The average of the common logarithm of the number of infectious units recovered from the treated test specimens at the end of the incubation time.

An Mv value of ≥ 1 indicates antiviral activity.

Remarks:# The identified test is performed in our partner laboratory.

===== END OF REPORT =====

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Page 3 of 3