Test Report

JOB REF NO. : 2022-03-15-019
DATE RECEIVED : 15th March 2022
DATE REPORTED : 01st April 2022
PAGE : 1 of 9

Test Report No. : CPSA/220484116-CA87921
Company : Holista Biotech Sdn. Bhd.
Unit 1201, 12th Floor, Amcorp Trade Centre PJ Tower, No. 18 Persiaran Barat, 46050 Petaling Jaya, Selangor, Malaysia.

The following merchandise was (were) submitted and identified by the client as:

Sample Description	:	Super Bio Nano Silver (Silaeris AgNP)
Sample Appearance	:	Opaque, brown solution
Sample Receiving Date	:	15th March 2022
Storage Conditions	:	Room temperature
Product Diluent	:	Distilled water
Active substances	:	Nanosilver
Testing Period	:	15th March 2022 – 31st March 2022
Test Requested	:	Determination of the Virucidal Activity
Test Method	:	EN 14476:2013+A2:2019 (E) Chemical disinfectants and antiseptics – Quantitative suspension test for the evaluation of virucidal activity in the medical area – Test method and requirements (phase 2, step 1)
Test Result	:	Please see the next page(s)
Tested by	:	The test was externally provided.
Remark	:	-

SIGNED FOR AND ON BEHALF OF
SGS (MALAYSIA) SDN BHD

LOW ZHEN HUI
MULTI-BUSINESS LABORATORY MANAGER
FOOD ANALYST NO. MJMM 0178

Test Report

Test Report No. : CPSA/220484116-CA87921

Experimental Conditions

Test Organism(s)	:	*Human coronavirus*, strain 229E, ATCC VR-740
Concentration/ Contact Time	:	150.00ppm / 30 and 60 minutes
Loading	:	0.30 g/L Bovine Albumin Solution
Test Temperature	:	20 ± 1°C
Incubation Period	:	5 days, 36 ± 1°C

Test Method and Its Validation

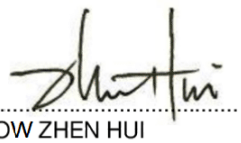
Testing Method	:	Quantal test
Inactivation Method	:	Immediate dilution Molecular sieving using MicroSpin™ S 400 HR (for formaldehyde only)

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

Test Results

The results are stated in Tables A and B.

SIGNED FOR AND ON BEHALF OF
SGS (MALAYSIA) SDN BHD



LOW ZHEN HUI
MULTI-BUSINESS LABORATORY MANAGER
FOOD ANALYST NO. MJMM 0178

Test Report

JOB REF NO. : 2022-03-15-019
DATE RECEIVED : 15th March 2022
DATE REPORTED : 01st April 2022

Test Report No. : CPSA/220484116-CA87921

Conclusion

Super Bio Nano Silver (Silaeris AgNP) showed the required viral reduction of ≥4.0 $\log_{10}$ against test strain(s) *Human coronavirus* ATCC VR-740 in accordance with EN 14476:2013+A2:2019 (E) at 150.00 ppm concentration(s) after 30 and 60 minutes under the stated condition. According to the simple acceptance decision rule†, there is <50% risk of false acceptance.

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 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.

SIGNED FOR AND ON BEHALF OF
SGS (MALAYSIA) SDN BHD

LOW ZHEN HUI
MULTI-BUSINESS LABORATORY MANAGER
FOOD ANALYST NO. MJMM 0178

Test Report

JOB REF NO. : 2022-03-15-019
DATE RECEIVED : 15th March 2022
DATE REPORTED : 01st April 2022

Test Report No. : CPSA/220484116-CA87921

Table A: Evaluation of the virucidal activity of Super Bio Nano Silver (Silaeris AgNP) on test strains according to EN 14476

Product : Super Bio Nano Silver (Silaeris AgNP)

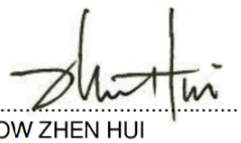
Loading : 0.30 g/L Bovine Albumin Solution

Test Strain : *Human coronavirus* ATCC VR-740

Virus control, V_C	Cytotoxicity effect, CE
V_{C1}: 6.63 ± 0.25 V_{C2}: 6.88 ± 0.37	CE_1: 2.50 ± 0.00 CE_2: 2.50 ± 0.00

Test concentration (ppm) / contact time (min)	First assay, N_{a1}	Second assay, N_{a2}	Average reduction
150.00 / 30	N_{a1}: ≤2.50 ± 0.00 lg R_1: **≥4.13 ± 0.25**	N_{a2}: ≤2.50 ± 0.00 lg R_2: **≥4.38 ± 0.37**	lg R: **≥4.26 ± 0.32**
150.00 / 60	N_{a1}: ≤2.50 ± 0.00 lg R_1: **≥4.13 ± 0.25**	N_{a2}: ≤2.50 ± 0.00 lg R_2: **≥4.38 ± 0.37**	lg R: **≥4.26 ± 0.32**

SIGNED FOR AND ON BEHALF OF
SGS (MALAYSIA) SDN BHD

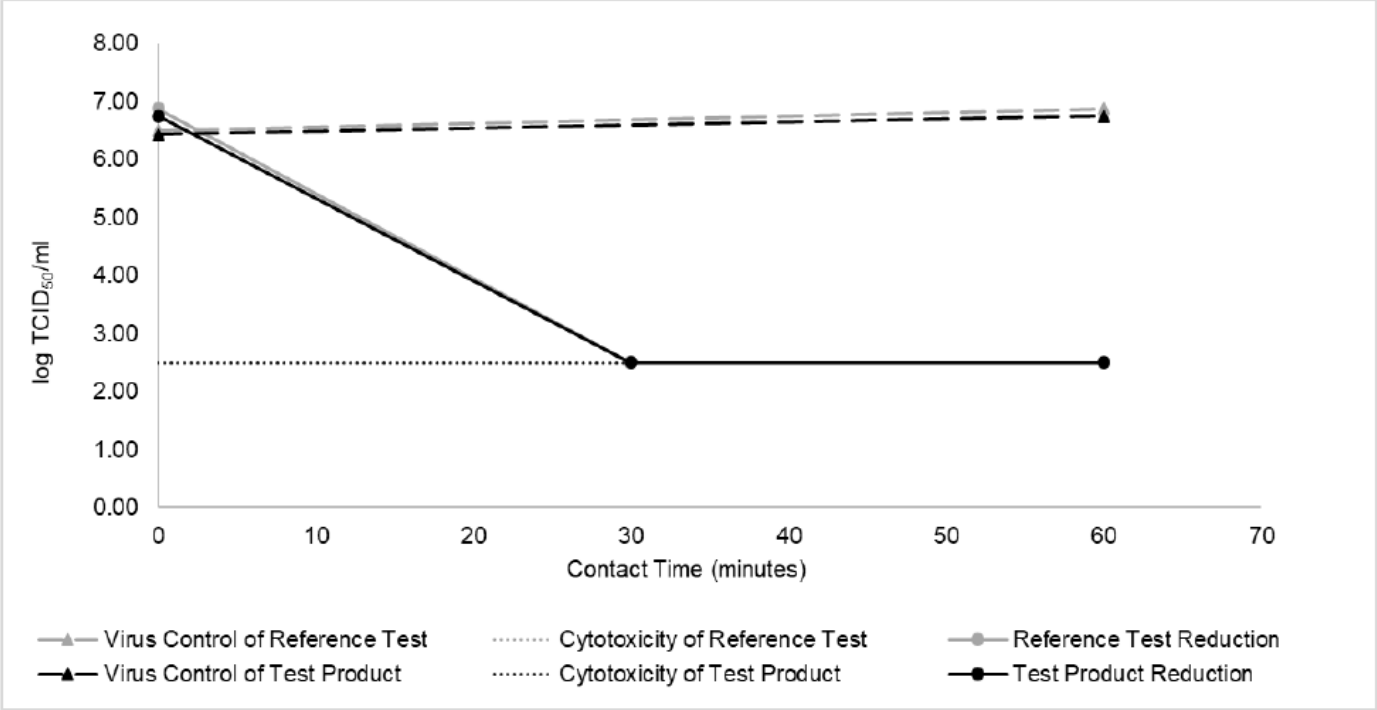


LOW ZHEN HUI
MULTI-BUSINESS LABORATORY MANAGER
FOOD ANALYST NO. MJMM 0178

Test Report

JOB REF NO. : 2022-03-15-019
DATE RECEIVED : 15th March 2022
DATE REPORTED : 01st April 2022

Test Report No. : CPSA/220484116-CA87921



SIGNED FOR AND ON BEHALF OF
SGS (MALAYSIA) SDN BHD

LOW ZHEN HUI
MULTI-BUSINESS LABORATORY MANAGER
FOOD ANALYST NO. MJMM 0178

Test Report

JOB REF NO. : 2022-03-15-019
DATE RECEIVED : 15th March 2022
DATE REPORTED : 01st April 2022

Test Report No. : CPSA/220484116-CA87921

Table B: Control tests and method validation for Table A

Test strain	Cell susceptibility control	Suppression efficiency control	Reference test for virus inactivation
Human coronavirus ATCC VR-740	A: 7.00 ± 0.38 A_{PBS}: 6.75 ± 0.33	B: 7.00 ± 0.38 V_C: 6.63 ± 0.25	C_{30}: ≥4.38 ± 0.37 C_{60}: ≥4.38 ± 0.37

Note

$TCID_{50}$: The dilution of the virus suspension that induces a cytopathic effect (CPE) in 50% of cell culture units.
CPE : The morphological alteration of cells and/or their destruction caused by the cytopathic effect of virus multiplication.
V_C : log_{10} $TCID_{50}$ per mL in the viral test suspension at the beginning and at the maximum contact time.
N_a : log_{10} $TCID_{50}$ per mL in the test mixture at the end of the contact time.
CE : The morphological alteration of cells caused by the cytotoxicity effect of the product test solution.
A : log_{10} $TCID_{50}$ per mL in the cell susceptibility control as compared to PBS.
B : log_{10} $TCID_{50}$ per mL in the suppression efficiency control as compared to the virus control.
C : log_{10} $TCID_{50}$ per mL in the reference test for virus inactivation after 30 and 60 minutes (5 and 15 minutes for vaccinia virus).

SIGNED FOR AND ON BEHALF OF
SGS (MALAYSIA) SDN BHD

LOW ZHEN HUI
MULTI-BUSINESS LABORATORY MANAGER
FOOD ANALYST NO. MJMM 0178

Test Report

Test Report No. : CPSA/220484116-CA87921

Table C: Summary of the log reductions of the quantitative suspension test according to EN 14476

Test strain	Test concentration (ppm) / contact time (min)	Log reduction ($TCID_{50}$/mL)	Associated risk†
Human coronavirus ATCC VR-740	150.00/ 30	≥ 4.26 ± 0.32	<50% risk of false acceptance
	150.00/ 60	≥ 4.26 ± 0.32	<50% risk of false acceptance

†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.

SIGNED FOR AND ON BEHALF OF
SGS (MALAYSIA) SDN BHD

LOW ZHEN HUI
MULTI-BUSINESS LABORATORY MANAGER
FOOD ANALYST NO. MJMM 0178

Test Report

JOB REF NO. : 2022-03-15-019
DATE RECEIVED : 15th March 2022
DATE REPORTED : 01st April 2022
PAGE : 8 of 9

Test Report No. : CPSA/220484116-CA87921

Efficacy of Super Bio Nano Silver (Silaeris AgNP) against *Human coronavirus*, strain 229E, ATCC VR-740 in a quantitative suspension test at 20°C according to EN 14476:2013+A2:2019 (E) under clean condition

Expert Opinion*

This expert opinion is based on the test report CPSA/220484116-CA87921 dated 01st April 2022.

The virucidal activity of the disinfectant Super Bio Nano Silver (Silaeris AgNP) of Holista Biotech Sdn Bhd against *Human coronavirus* ATCC VR-740 was investigated by a quantitative suspension test according to EN 14476:2013+A2:2019 (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 ≥ 4 $\log_{10}$ (inactivation ≥99.99%) within the recommended exposure period.

Super Bio Nano Silver (Silaeris AgNP) was examined at 20°C at the concentration(s) of 150.00ppm for the exposure time(s) of 30 and 60 minutes. After the exposure time(s), the viral reduction exceeded 4 $\log_{10}$-steps in all assays. According to the simple acceptance decision rule†, there is <50% risk of false acceptance. Therefore, a virucidal activity against *Human coronavirus* ATCC VR-740 was measured as follows:

Clean condition	150.00 ppm	30 minutes
Clean condition	150.00 ppm	60 minutes

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

†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.

SIGNED FOR AND ON BEHALF OF
SGS (MALAYSIA) SDN BHD

LOW ZHEN HUI
MULTI-BUSINESS LABORATORY MANAGER
FOOD ANALYST NO. MJMM 0178

Test Report

JOB REF NO. : 2022-03-15-019
DATE RECEIVED : 15th March 2022
DATE REPORTED : 01st April 2022

Test Report No. : CPSA/220484116-CA87921

Test Part Description
Sample Description : Super Bio Nano Silver (Silaeris AgNP)

HOLISTA BIOTECH SDN BHD
CA87921

SGS authenticate the photo on original report only
****End of Test Report****

SIGNED FOR AND ON BEHALF OF
SGS (MALAYSIA) SDN BHD

LOW ZHEN HUI
MULTI-BUSINESS LABORATORY MANAGER
FOOD ANALYST NO. MJMM 0178