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ASX RELEASE **16 March 2022**

ASX: NVU

Nanoveu Launches Disinfection Robot Under a RaaS Model

Highlights

- **Nanoveu has launched Nanoshield™ Bot - a Robot as a Service ("RaaS") based disinfection robot that will dispense a fine mist of the Company's newly launched e-water, which contains Complex Oxygen Compounds with excellent antiviral and antibacterial efficacy, e-water is:**
  - **Chemical and alcohol-free, halal certified, pH neutral disinfectant; and**
  - **Of food grade[1], safe to inhale[2], causes no eye[3] or skin irritation[4].**
- **e-water is proven effective in eliminating viruses - inactivating 99.93% of SARS-CoV-2 (COVID-19) after 30 minutes[5], >99.99% of feline coronavirus within 30 seconds[6], and 99.86% of Influenza A within 30 seconds.[7]**
- **e-water has excellent antibacterial efficacy, reducing >99.999% of Escherichia coli, Salmonella enterica, Pseudomonas aeruginosa and Staphylococcus aureus within 30 seconds[8].**
- **The product will be marketed and sold under the Nanoshield™ brand as a RaaS, whereby the Company will provide a complete autonomous robot based disinfecting solution.**
- **The RaaS business model significantly reduces the capital expenditure for clients, and has the potential to result in cost savings of disinfecting public areas.**
- **The Nanoshield™ Bot was trialled at several hotels in Singapore with highly positive feedback received, and Nanoveu will initially focus on the Singapore market.**
- **With international travel reopening and staff shortages due to the global pandemic, the Nanoshield™ Bot will reduce manpower through automation, and staff exposure to the virus.**
- **The technology targets a significant market with 700,000 hotels and resorts globally[9] and the RaaS market expected to reach US$103.3 billion by 2026 at a CAGR of 23.3%[10].**

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[1] Appended Report - Food Inspection Report, Gifu Research Center for Public Health, 17 My 2021
[2] Appended Report - Acute Oral Toxicity Test Using Female Mice, Japan Food Research Laboratories, 21 May 2021
[3] Appended Report - Eye Irritation Test Using Vitrigel, Japan Food Research Laboratories, 11 May 2021
[4] Appended Report - Primary Skin Irritation Test Using Rabbits, Japan Food Research Laboratories, 19 May 2021
[5] Appended Report - Testing the Inactivation Effect of Test Materials on Viruses, Shokukanken Inc, 10 May 2021
[6] Appended Report - Inactivation test of feline coronavirus using e-water, Kitasto Research Center for Environmental Science, 20 April 2020
[7] Appended Report - Evaluation of Antiviral Activity of e-water, Kitasto Research Center for Environmental Science, 15 May 2009
[8] Appended Report - Virus Inactivation Test, Japan Food Research Laboratories, 7 June 2021
[9] https://www.condorferries.co.uk/hotel-industry-statistics#:~:text=HOTEL%20INDUSTRY%20STATISTICS-,How%20many%20hotels%20are%20there%20in%20the%20world%3F,over%2016.4%20million%20hotel%20rooms.
[10] https://www.marketsandmarkets.com/Market-Reports/service-robotics-market-681.html?gclid=Cj0KCQiA95aRBhCsARIsAC2xvfzMRKMeygfvykJklBe-2Vqm6Y4w4XiwQ4h9j5MKYpQQ33ffQ52VEz8aAkF-EALw_wcB

Nanoveu Limited ("**Nanoveu**" or the "**Company**") (**ASX: NVU**) is pleased to announce that it has launched the Nanoshield™ Bot - the world's first disinfection robot which kills viruses and bacteria using their new e-water; a chemical and alcohol-free formulation which is Halal certified.

e-water is a pH neutral sanitation water containing Complex Oxygen Compounds. It is food grade[1] and not harmful to inhale[2], causes no eye[3] or skin irritation[4], deodorises air, moisturises the skin, can be used with existing ultrasonic humidifier technology and passes Japanese tap water standards.

e-water is effective in eliminating coronavirus (SARS-CoV-2), inactivating 99.93% of SARS-CoV-2 (COVID-19) within 30 minutes, tested by Shokukanken Inc, Japan[5]. Founded in 1998, Shokukanken is a full-service food testing and analysis laboratory operating in Maebashi City, Gunma, Japan. It is also effective in eliminating feline coronavirus within 30 seconds[6] and Influenza A within 30 seconds.[7]

e-water is made from a diaphragm free electrolytic cell method and vibrates molecules at a constant frequency to create ions that have strong antiviral efficacy, whilst maintaining pH neutrality.

Nanoveu Founder and CEO, Alfred Chong, commented: "We are very excited to announce the launch of our Nanoshield™ Bot following the successful laboratory test results received from Japan Food Research Laboratories, Shokukanken Inc and Tokyo Metropolitan Food Technology Centre**.** Importantly, with our new Robot as a Service business model, we hope to appeal to a broader customer market by taking the hassle out of using robots and significantly reducing the upfront capital expenditure. With successful trials already undertaken at several renowned hotels in Singapore, we look forward to rolling out this service immediately and expect a robust take-up for such an offering."

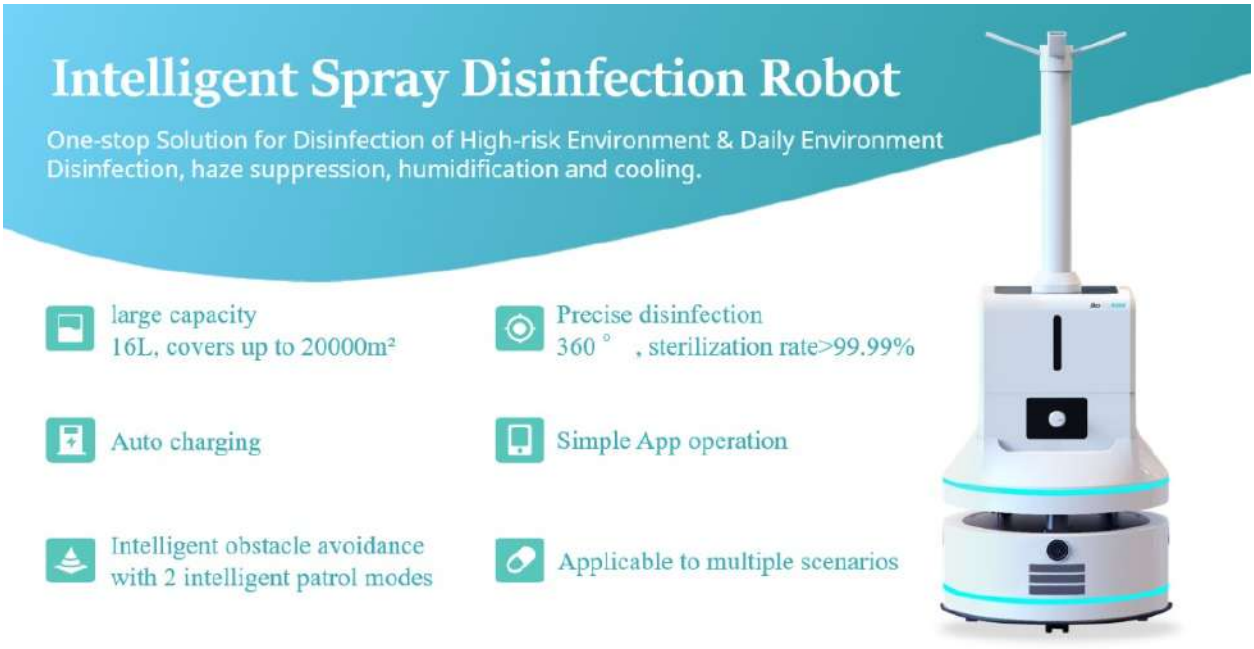

Image 1 – Nanoshield™ Bot - a Robot as a Service ("RaaS") based disinfection robot

e-water has excellent antibacterial efficacy, reducing >99.999% of Escherichia coli, Salmonella enterica, Pseudomonas aeruginosa & Staphylococcus aureus within 30 seconds, tested by Tokyo Metropolitan Food Technology Centre, Japan[6].

Nanoshield™ Bot will be marketed and sold under the Nanoshield™ brand as a Robot as a Service ("RaaS"), whereby the Company will provide a complete solution including the supply of robot, maintenance, software management, the e-water disinfectant solution, public liability insurance and mapping.

Under the RaaS model, Nanoveu plans to lease robots to the hotel under a monthly service charge for a 12-24 month contract, with the robots currently supplied to the Company under a third party manufacturing contract.

Traditionally robots have been expensive and difficult to maintain, hence the Company's RaaS business model provides an accessible solution for hotels to maintain a high level of health standards, whilst also minimising the initial capital outlay required to deploy a robot.

The RaaS business model significantly reduces the capital expenditure for clients, and has the potential to result in cost savings, with the RaaS offering anticipated to be cheaper than full time staffing to perform the same tasks.

The Nanoshield™ Bot was trialled at several five star hotels in Singapore including Resort World Sentosa & Ascott Hotel, with the trials including mapping, e-water and 3 day load period. Following the highly positive feedback received, there are currently a backlog of hotels awaiting trials, with Nanoveu to initially focus in the Singaporean market including hotels, hospitals, malls and airports with plans to expand into further jurisdictions. The recurring service fee will provide a robust baseline of revenue for the company.

With the positive feedback, Nanoveu expects to be able to deploy further commercial units, however, notes that currently, it does not yet have signed deployment contracts.

- Ends -

This announcement has been authorised for release by the Board of Directors

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About Nanoveu Limited

Nanoveu (ASX:NVU) is technology innovation company specialised in modern, cutting-edge nanotechnology that improve the way that people live, from reducing contagious transmissions on high touch points to immersive vision-based entertainment. https://www.nanoveu.com/

Nanoshield - is a film which uses a patented polymer of Cuprous embedded film to self-disinfect surfaces. Nanoshield antiviral protection which is available in a variety of shapes and forms, from mobile screen covers, to mobile phone cases and as a PVC commercial film, capable of being applied to a number of surfaces such as doorhandles and push panels. The perfectly clear plastic film contains a layer of charged copper nanoparticles which have antiviral and antimicrobial properties. This technology is also being applied to fabric applications targeting use in the personal protective equipment sector.

EyeFly3D - is a film applied to digital displays that allowed users to experience 3D without the need for glasses on everyday mobile handheld devices.

Customskins - are vending machines capable of precisely applying screen covers to mobile phones with an alignment accuracy of 150 microns.

EyeFyx - currently in research and development stage, EyeFyx is a vision correction solution using hardware and software to manipulate screen output addressing long-sightedness without the need to wear reading glasses.

InnoX
Katsukawa Bldg.,2F, 2-12-15 Marunouchi
Naka-ku, Nagoya, Japan 460-0002

20th January 2022

DECLARATION

I, Tomoharu Inoue, do hereby solemnly and sincerely declare :

1. That I am well acquainted with the Japanese and English languages, and

2. That the attached document :

Test report

is a true translation from the original Japanese text.

And I make this solemn declaration conscientiously believing the same to be true and correct.

InnoX Co., Ltd.

T. Inoue

Tomoharu Inoue

21st May 2021

Test report

Client: [redacted]

Japan Food Research Laboratories
52-1 Motoyoyogi-cho, Shibuya-ku, Tokyo 151-0062, Japan

Sample: 0-10 (E-Water)

Title: Acute oral toxicity test using female mice

We are pleased to report the test results of the above specimens submitted to our center on 5th April 2021.

Acute oral toxicity test using female mice

Summary

a Acute oral toxicity test (limit test) was conducted using female mice with 0-10 (α E-Water) as a sample.

A single oral dose of 5000 mg/kg of the sample was administered to female mice and they were observed for 14 days. As a result, no abnormalities or deaths were observed during the observation period.

Based on the above, the LD50 value of the sample was evaluated to be greater than 5000 mg/kg in female mice after a single oral administration.

1. Client

[redacted]

2. Sample

0-10 (E-Water)

3. Test Facility

Japan Food Research Laboratories

Tama Laboratory

11-10 Nagayama 6-chome, Tama-shi, Tokyo 206-0025, Japan

4. Test period

From 5th April 2021 to 21st May 2021

5. Test purpose

The acute oral toxicity of the samples was determined in female mice in accordance with the OECD Guideline for Testing of Chemicals 420 (2001).

6. Preparation of the test solution

The sample was diluted with water for injection to prepare a test solution of 250 mg/mL.

7. Test animal

Five five-week-old ICR female mice were purchased from CLEA Japan, Inc. and used for the study after being kept for about one week to confirm that there were no abnormalities in their general condition. The animals were housed in polycarbonate cages (5 mice each) and kept in a room with a room temperature of 23°C, a soil temperature of 3°C, and an illumination time of 12 hours/day. Feed [solid diet for mice and rats; Lab. MR Stock, Nosan Corporation] and drinking water (tap water) were consumed ad libitum.

8. Test method

The test group received 5000 mg/kg as the sample dose, and the control group received water for injection as the solvent control. 5 animals were used in each group.

The test animals were fasted for approximately 4 hours prior to dosing. The test animals were fasted for about 4 hours before dosing, and then weighed and weighed, and the test group received the test solution and the control group received water for injection at a dose of 20 mL/kg each by gavage.

The observation period was 14 days, with frequent observations on the day of administration and once a day from the following day. Body weight was measured at 7 and 14 days after dosing and Levene's test was performed. Since there was no difference in variance, Student's t-test was used to compare the groups. The significance level was set at 5 %. All animals were necropsied at the end of the observation period.

9. Test results

1) Deaths

There were no deaths during the observation period in any of the treatment groups.

2) General condition

No abnormalities were observed during the observation period in any of the dose groups.

3) Weight change (Table-1)

There was no difference in the body weight of the test group compared to the control group at 7 and 14 days post-dose.

4) Autopsy findings

At necropsy at the end of the observation period, no abnormalities were observed in any of the test animals.

10. Conclusion

The acute oral toxicity test (limit test) using female mice was conducted on the samples.

As a result, no abnormalities or deaths were observed during the observation period.

Based on the above, the LD50 value of the test sample was evaluated to be above 5000 mg/kg in females at a single oral dose using mice.

Table-1. Weight change

Dose group	Before administration	After administration (day)	
		7	14
Test group	25.6 ± 1.0 (5)	28.2 ± 1.9 (5)	30.2 ± 1.4 (5)
Target group	25.8 ± 1.0 (5)	29.1 ± 1.6 (5)	30.7 ± 1.6 (5)

Body weight is expressed as the mean value with standard deviation. (Unit: g)

The number of animals is shown in parentheses.

2021 年 05 月 21 日

試 験 報 告 書

依 頼 者　[redacted]

一般財団法人
日本食品分析センター
東京都渋谷区元代々木町52番1号

検　　体　　0-10（αトリノ水）

表　　題　　雌マウスを用いる急性経口毒性試験

2021 年 04 月 05 日当センターに提出された上記検体について試験した結果をご報告いたします。

雌マウスを用いる急性経口毒性試験

要　　約

0-10（αトリノ水）を検体として，雌マウスを用いる急性経口毒性試験（限度試験）を行った。

5000 mg/kgの用量の検体を雌マウスに単回経口投与し，14日間観察を行った。その結果，観察期間中に異常及び死亡例は認められなかった。

以上のことから，マウスを用いる単回経口投与において，検体のLD50値は，雌では5000 mg/kgを超えるものと評価された。

1　依 頼 者

[redacted]

2　検　　体

0-10（αトリノ水）

3　試験実施施設

一般財団法人日本食品分析センター　多摩研究所

東京都多摩市永山6丁目11番10号

4　試験期間

2021年04月05日～2021年05月21日

5　試験目的

検体について，OECD Guideline for Testing of Chemicals 420(2001)に準拠し，雌マウスにおける急性経口毒性を調べる。

6　試験液の調製

検体を注射用水で希釈し，250 mg/mLの試験液を調製した。

7　試験動物

5週齢のICR系雌マウスを日本クレア株式会社から購入し，約1週間の予備飼育を行って一般状態に異常のないことを確認した後，試験に使用した。試験動物はポリカーボネート製ケージに各5匹収容し，室温23 ℃±3 ℃，照明時間12時間/日とした飼育室において飼育した。飼料[マウス，ラット用固型飼料；ラボMRストック，日本農産工業株式会社]及び飲料水(水道水)は自由摂取させた。

8　試験方法

検体投与用量として5000 mg/kgを投与する試験群及び溶媒対照として注射用水を投与する対照群を設定し，各群につきそれぞれ5匹を用いた。

投与前に約4時間試験動物を絶食させた。体重を測定した後，試験群には試験液，対照群には注射用水をそれぞれ20 mL/kgの投与液量で胃ゾンデを用いて強制単回経口投与した。

観察期間は14日間とし，投与日は頻回，翌日から1日1回の観察を行った。投与後7及び14日に体重を測定し，Leveneの検定を行った。分散に差が認められなかったため，Studentのt-検定により群間の比較を行った。有意水準は5 %とした。観察期間終了時に動物すべてを剖検した。

9　試験結果

1)　死亡例

いずれの投与群においても，観察期間中に死亡例は認められなかった。

2)　一般状態

いずれの投与群においても，観察期間中に異常は見られなかった。

3)　体重変化(表-1)

投与後7及び14日の体重測定において，試験群は対照群と比べ体重値に差は見られなかった。

4)　剖検所見

観察期間終了時の剖検では，すべての試験動物に異常は見られなかった。

10　結　　論

検体について，雌マウスを用いる急性経口毒性試験(限度試験)を実施した。

その結果，観察期間中に異常及び死亡例は認められなかった。

以上のことから，マウスを用いる単回経口投与において，検体のLD50値は，雌では5000 mg/kgを超えるものと評価された。

表-1　体重変化

投与群	投与前	投与後(日)	
		7	14
試験群	25.6±1.0 (5)	28.2±1.9 (5)	30.2±1.4 (5)
対照群	25.8±1.0 (5)	29.1±1.6 (5)	30.7±1.6 (5)

体重は平均値±標準偏差で表した(単位：g)。

括弧内に動物数を示した。

以　上

InnoX
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Naka-ku, Nagoya, Japan 460-0002

20th January 2022

DECLARATION

I, Tomoharu Inoue, do hereby solemnly and sincerely declare :

1. That I am well acquainted with the Japanese and English languages, and

2. That the attached document :

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And I make this solemn declaration conscientiously believing the same to be true and correct.

InnoX Co., Ltd.

T. Inoue

Tomoharu Inoue

11th May 2021

Test report

Client: [redacted]

Japan Food Research Laboratories
52-1 Motoyoyogi-cho, Shibuya-ku, Tokyo 151-0062, Japan

Sample: 0-10 (E-Water)

Title: Eye irritation test using Vitrigel

We are pleased to report the test results of the above specimens submitted to our center on 5th April 2021.

Eye irritation test using Vitrigel

1. Client

[redacted]

2. Sample

0-10 (E-Water)

3. Test purpose

For samples, determine eye irritancy using Vitrigel in accordance with OECD Guideline for Testing of Chemicals 494 (2019).

4. Test conditions

1) Cells used, etc.

It is shown in Table-1.

Table-1. Cells used, etc.

Cells	Human corneal epithelial cells (HCE-T cells) [RIKEN BioResource Center]
Medium	Culture medium for corneal model [KANTO CHEMICAL CO., INC.]
Vitrigel	ad-MED Vitrigel 2 [KANTO CHEMICAL CO., INC.]

2) Culture conditions

37°C, 5% CO_2 concentration

5. Preliminary test

1) Checking solubility

The test solution was diluted by adding 4 mL of culture medium to 0.1 g of the sample, and it was confirmed that 2.5 w/v% test solution could be prepared.

2) Checking pH

It was confirmed that the pH of the 2.5 w/v% test solution of the sample was greater than 5 (pH 7.0).

6. Main test

1) Test method

(1) Creation of a human corneal epithelial model

The vitrigel is a collagen vitrigel membrane attached to the bottom of the chamber. The chamber was set in a 12-well plate, and 0.5 ml (6 x 104 cells/well) of human corneal epithelial cells (1.2 x 105 cells/ml) were seeded on the collagen vitrigel membrane. 1.5 mL of medium was added to the wells and the cells were cultured for 2 days. The medium in the chamber was removed and the cells were cultured for another 4 days (air-liquid interface culture). After culturing, 0.5 ml of culture medium was added to the chamber, and the chamber with transepithelial electrical resistance (TEER) of 140 to 220 Ω*cm2 was used as a human corneal epithelial dry cell on the same day.

(2) Preparation of each test sample

A 2.5 w/v% test solution was prepared by adding 4 mL of culture medium to 0.1 g of the sample. A 2.5 w/v% test solution was prepared in the same manner as the samples, with saline solution [HIKARI PHARMACEUTICAL CO., LTD.] as the negative control, benzalconium chloride [FUJIFILM Wako Pure Chemical Co., Ltd.] as the positive control, and 99.5% ethanol [KANTO CHEMICAL CO., INC.] as the reference sample.

(3) Test sample application and measurement

For each test substance, three human corneal epithelial models prepared in (1) were used. 0.5 mL of each test solution prepared in (2) was added to the epidermal surface of a human corneal epithelial model. Immediately after the addition, the TEER values of each human corneal epithelium model were measured every 10 seconds for 3 minutes using a membrane resistance measurement device [Tsuruga Electric Co., Ltd.].

2) Analysis of Time lag, Intensity and Plateau level

From the obtained TEER values, Timelag, Intensity and Plateaulevel of each test substance were calculated by the following equation. Figure-1 shows an overview of the changes in TEER values over time after exposure to the test substances.

A dedicated calculation sheet (provided by Kanto Chemical Co., Ltd.) was used for the analysis.

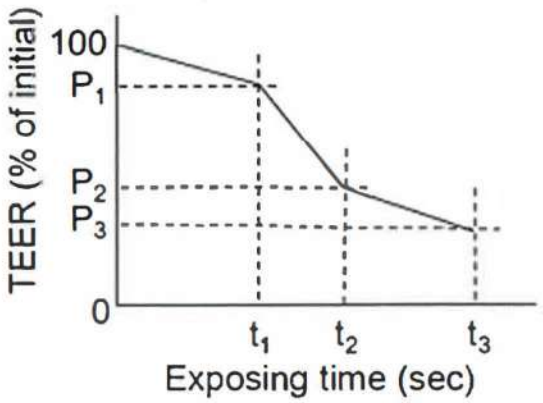


Figure 1. Summary of changes in TEER values over time after exposure to the test substance [Source: OECD Gui deline for Testing of Chemicals 494 (2019)]

Time lag (sec): t_1

Intensity (%/sec): $-(P_2 - P_1) / (t_2 - t_1)$

Plateau level (%): $100 - P_2$

t_1 (sec): Maximum exposure time at which the rate of change of TEER value is within the range of $0 \geq dP/dT > -0.03$%/sec

t_2 (sec): After t_1, the first exposure time when the rate of change of TEER value satisfies the condition of $dP/dT \leq -0.03$%/sec and then $0 \geq dP(P_3 - P_2) / dY (t_3 - t_2) > -0.03$%/sec

t_3 (sec): $t_2 + 30$sec

P_1, P_2, P_3 (%): Percentage of TEER values at t_1, t_2, and t_3 relative to the TEER value at exposure time 0 sec.

dP/dT: Derivatives of P with respect to t

3) Conditions for approval of the test

(1) The plateau level of the negative control is 5% or less.

(2) The Plateau level of the positive control must be 40% or more.

(3) The Plateau level of the positive control is 40% or more.

4) Evaluation Method

In accordance with the criteria shown in Table-2, the eye irritation potential of the specimens was evaluated from the values of Time lag, Intensity and Plateau level for the specimens that met the conditions for the test.

Table-2. Criterion

Criterion	Result
Time lag ≤ 180 sec or Intensity ≥ 0.05%/sec or Plateau level > 5.0 %	Irritant
Time lag > 180 sec and Intensity < 0.05%/sec and Plateau level ≤ 5.0 %	Non- irritant

7. Test results

The test results are shown in Table-3.

Based on the results of the negative control, positive control, and reference samples, this test met the conditions for approval.

The time lag of the sample was 190 sec, the intensity was 0.00%/sec, and the plateau level was -6%, so the eye irritation was evaluated as non-irritant.

Table-3. Test results

Test substance	Time lag (sec)	Intensity (%/sec)	Plateau level (%)	Evaluation
Sample	190	0.00	-6	Non- irritant
Negative control	190	-0.03	0	Non- irritant
Positive control	0	0.44	80	Irritant
Reference sample	0	0.26	36	Irritant

8. References

Vitrigel-EIT Method Standard Procedure

2021 年 05 月 11 日

試 験 報 告 書

依 頼 者　[redacted]

一般財団法人
日本食品分析センター
東京都渋谷区元代々木町52番1号

検　　体　　0-10（αトリノ水）

表　　題　　ビトリゲルを用いる眼刺激性試験

2021 年 04 月 05 日当センターに提出された上記検体について試験した結果をご報告いたします。

ビトリゲルを用いる眼刺激性試験

1　依 頼 者

[redacted]

2　検　　体

0-10（αトリノ水）

3　試験目的

検体について，OECD Guideline for Testing of Chemicals 494(2019)に準拠し，ビトリゲルを用いて眼刺激性を調べる。

4　~[illegible]

1)　用いた細胞など

表-1に示した。

表-1　用いた細胞など

細　　胞	ヒト角膜上皮細胞(HCE-T 細胞)［理化学研究所バイオリソースセンター］
培　　地	••
ビトリゲル	••

2)　培養条件

37 ℃，5 %CO_2濃度とした。

5　予備試験

1)　溶解性の確認

検体0.1 gに培地4 mLを加えて希釈し，2.5 w/v%試験液の調製が可能であることを確認した。

2)　pHの確認

検体の2.5 w/v%試験液のpHが5を超えることを確認した(pH 7.0)。

～

1)　試験方法

①　ヒト角膜上皮モデルの作製

ビトリゲルは，コラーゲンビトリゲル膜をチャンバーの底面に貼り付けたものである。チャンバーを12ウェルプレートにセットし，1.2×10^5 cells/mLとしたヒト角膜上皮細胞をコラーゲンビトリゲル膜上に0.5 mL(6×10^4 cells/well)播種した。ウェルに培地1.5 mLを添加し，2日間培養した。チャンバー内の培地を除去し，さらに4日間培養した(気相-液相界面培養)。培養後，チャンバーに培地を0.5 mL添加し，経上皮電気抵抗値(以下「TEER値」とする。)が140～220 Ω・cm^2のチャンバーをヒト角膜上皮モデルとして当日中に使用した。

②　各試験物質の準備

検体0.1 gに培地4 mLを加え，2.5 w/v%試験液を調製した。また，陰性対照として生理食塩液[光製薬株式会社]，陽性対照として塩化ベンザルコニウム[富士フイルム和光純薬株式会社]，参照試料として99.5 %エタノール[関東化学株式会社]について，検体と同様に2.5 w/v%試験液を調製した。

③　試験物質適用及び測定

1つの試験物質につき，①で作製したヒト角膜上皮モデル3個を用いた。ヒト角膜上皮モデルの表皮面に②で調製した各試験液0.5 mLを添加した。添加直後より，膜抵抗測定装置[鶴賀電機株式会社]を用い，各ヒト角膜上皮モデルのTEER値を10秒毎に3分間測定した。

2)　Time lag, Intensity及びPlateau levelの解析

得られたTEER値から，次式により各試験物質のTime lag, Intensity及びPlateau levelを算出した。試験物質を曝露した後のTEER値の経時変化の概略を図-1に示した。

なお，解析には専用の計算シート(関東化学株式会社より提供)を用いた。

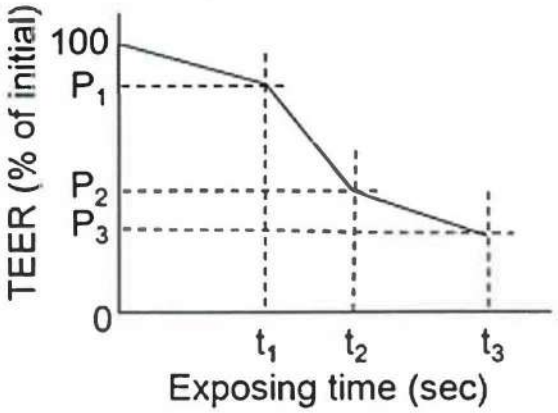


図-1　試験物質を曝露した後の TEER 値の経時変化の概略

[出典：OECD Guideline for Testing of Chemicals 494(2019)]

Time lag(秒)：t_1

Intensity(%/秒)：$-(P_2 - P_1)/(t_2 - t_1)$

Plateau level(%)：$100 - P_2$

ただし，

t_1(秒)：TEER値の変化速度が$0 \geqq dP/dT > -0.03$ %/秒の範囲内にある最大の曝露時間

t_2(秒)：t_1後，TEER値の変化速度が$dP/dT \leqq -0.03$ %/秒の条件を満たした後，$0 \geqq dP(P_3 - P_2)/dT(t_3 - t_2) > -0.03$ %/秒の条件を満たした最初の曝露時間

t_3(秒)：$t_2 + 30$秒

P_1, P_2, P_3(%)：曝露時間0秒のTEER値に対するt_1, t_2及びt_3それぞれのTEER値の割合を百分率で示した値

dP/dT：tに関するPの導関数

3)　試験の成立条件

①　陰性対照のPlateau levelが5 %以下であること。

②　陽性対照のPlateau levelが40 %以上であること。

③　参照試料のPlateau levelが10 %以上であること。

4)　評価方法

表-2の判定基準に従い，試験の成立条件を満たした検体について，Time lag，Intensity及びPlateau levelの値より検体の眼刺激性を評価した。

表-2　判定基準

判定基準	結果
Time lag≦180 秒 又は Intensity≧0.05 %/秒 又は Plateau level＞5.0 %	~
Time lag＞180 秒 及び Intensity＜0.05 %/秒 及び Plateau level≦5.0 %	非刺激性

7　試験結果

試験結果を表-3に示した。

陰性対照，陽性対照及び参照試料の結果より，本試験は試験成立条件を満たした。

検体のTime lagは190秒，Intensityは0.00 %/秒，Plateau levelは-6 %であったため，眼刺激性は非刺激性と評価された。

表-3　試験結果

試験物質	Time lag(秒)	Intensity(%/秒)	Plateau level(%)	評価
検体	190	0.00	-6	非刺激性
陰性対照	190	-0.03	0	非刺激性
陽性対照	0	0.44	80	刺激性
参照試料	0	0.26	36	刺激性

8　参考文献

Vitrigel-EIT法標準手順書.

以　上

InnoX
Katsukawa Bldg.,2F, 2-12-15 Marunouchi
Naka-ku, Nagoya, Japan 460-0002

20th January 2022

DECLARATION

I, Tomoharu Inoue, do hereby solemnly and sincerely declare :

1. That I am well acquainted with the Japanese and English languages, and

2. That the attached document :

Food Inspection Report

is a true translation from the original Japanese text.

And I make this solemn declaration conscientiously believing the same to be true and correct.

InnoX Co., Ltd.

T. Inoue

Tomoharu Inoue

No. 21F00508

17th May 2021
Reception No. 21001577

Food Inspection Report

[redacted]

Gifu Research Center for Public Health
4-6 Akebono-cho, Gifu City, Gifu Prefecture 500-8148, Japan

On 23th April 2021, the test results for the requested samples were as follows.

Sample: O10 (E-Water)

1. Test results

Turbidity	Not detected
Sediment	Not detected
E. coli group	Negative
Arsenic	Not detected (less than 0.2 μg/g)
Lead	Not detected (less than 0.4 μg/g)

2. Inspection method

In accordance with the "Standards for Foods, Additives, etc." (Ministry of Health and Welfare Notification No. 370, December 28, 1959) and food sanitation inspection guidelines.

No. 21F00508

令和3年5月17日
受付No. 21001577

食品検査成績書

[redacted]

一般財団法人 岐阜県公衆衛生検査センター
〒500-8148 岐阜市曙町4丁目6番地 TEL(058)247-1300
FAX(058)248-0229

令和3年4月23日 、ご依頼のありました試料の検査結果は、以下のとおりです。

試料名　O10(αトリノ水)

1. 検査結果

混濁	認めない
沈殿物	認めない
大腸菌群	陰性
ヒ素	不検出(0.2μg/g未満)
鉛	不検出(0.4μg/g未満)

2. 検査方法

「食品、添加物等の規格基準」(昭和34年12月28日 厚生省告示第370号)及び食品衛生検査指針による。

(注)当センターの書面による承認なしにこの検査結果の一部だけを複製することを禁止致します。

InnoX
Katsukawa Bldg.,2F, 2-12-15 Marunouchi
Naka-ku, Nagoya, Japan 460-0002

20th January 2022

DECLARATION

I, Tomoharu Inoue, do hereby solemnly and sincerely declare :

1. That I am well acquainted with the Japanese and English languages, and

2. That the attached document :

Test report

is a true translation from the original Japanese text.

And I make this solemn declaration conscientiously believing the same to be true and correct.

InnoX Co., Ltd.

T. Inoue

Tomoharu Inoue

19th May 2021

Test report

[redacted]

Japan Food Research Laboratories
52-1 Motoyoyogi-cho, Shibuya-ku, Tokyo 151-0062, Japan

Sample: 0-10 (E-Water)

Title: Primary skin irritation test using rabbits

We are pleased to report the test results of the above specimens submitted to our center on 5th April 2021.

Primary skin irritation test using rabbits

Summary

0-10 (E-Water) was used as a sample for skin irritation testing in rabbits in accordance with OECD Guideline for Testing of Chemicals 404 (2015). The samples were applied to the intact and injured skin of three rabbits for 24 hours. No irritation reaction was observed at 1, 24, 48 and 720 hours after removal. The primary irritation index (P.I.I.) calculated according to ISO 10993-10:2010, Biological evaluation of medical devices - Part 10, was 0.

Therefore, the specimens were evaluated to be in the category of "non-irritant" in the skin hypo allergenicity test using rabbits.

1. Client

[redacted]

2. Sample

0-10 (E-Water)

3. Test Facility

Japan Food Research Laboratories

Tama Laboratory

11-10 Nagayama 6-chome, Tama-shi, Tokyo 206-0025, Japan

4. Test period

From 5th April 2021 to 19th May 2021

5. Test purpose

The samples are tested for primary irritation of rabbit skin in accordance with OECD Guideline for Testing of Chemicals 404 (2015).

6. Test animal

Male Japanese white rabbits were purchased from Kitayama Labes Co., Ltd. and kept for more than one week to confirm that there were no abnormalities in their general condition. 3 rabbits with no skin abnormalities were used for the test. The test animals were housed individually in FRP cages and kept in a room with a room temperature of 23°C ± 3°C and lighting for 12 hours/day. They were fed a limited amount of solid rabbit and guinea pig feed (LRC4, Oriental Yeast Co., Ltd.) and were allowed to drink tap water.

7. Test method

The trunk back coat of each test animal was sheared approximately 24 hours prior to the test.

Four sites were set up in an area of about 6 cm^2 per test animal. Two of the sites were abraded with well-shaped scratches in the stratum corneum using an 18-gauge needle so that the scratches did not reach the dermis (wounded skin), and the other two sites were untreated (uninjured skin).

A gauze patch cut into approximately 2 cm x 3 cm was uniformly coated with 0.5 mL of the sample and applied to one each of the intact and injured skin, and then fixed with Multifix Roll [Alcare Co., Ltd.]. In addition, the patch was further held in place with Keep Silk [Nichiban Co., Ltd.] so that it was in contact with the skin. The rest of the intact and injured skin was used as control.

The application time was 24 hours, after which the patch was removed, and the titration site was wiped clean with water for injection. Observations were made at 1, 24, 48, and 72 hours after removal, and irritation reactions were scored according to Table-1.

In accordance with ISO 10993-10:2010, Biological evaluation of medical devices - Part 10, the total of the scores at 24, 48 and 72 hours after patch removal was divided by 6, and the average of the scores for each test animal was calculated to obtain the primary irritation index (P.I.I.), and the irritation of the specimens was evaluated based on the criteria shown in Table-2.

The weight of the test animals was measured at the beginning of the study and at the end of the observation.

8. Test results (Table-3 and Table-4)

1) Test animal A

No irritation reactions were observed in intact and injured skin throughout the observation period.

2) Test animal B

No irritation reactions were observed in intact and injured skin throughout the observation period.

3) Test animal C

No irritation reactions were observed in intact and injured skin throughout the observation period.

The P.I.I. calculated from the scoring results was 0.

No irritation reactions were observed in untreated uninjured or injured skin in any of the test animals throughout the observation period.

9. Conclusion

The sample was used as a sample for skin irritation testing in rabbits in accordance with OECD Guideline for Testing of Chemicals 404 (2015). The samples were applied to the intact and injured skin of three rabbits for 24 hours. No irritation reaction was observed at 1, 24, 48 and 720 hours after removal. The primary irritation index (P.I.I.) calculated according to ISO 10993-10:2010, Biological evaluation of medical devices - Part 10, was 0.

Therefore, the specimens were evaluated to be in the category of "non-irritant" in the skin hypo allergenicity test using rabbits.

10. Reference

ISO 10993-10:2010, Biological evaluation of medical devices - Part 10: Tests for irritation and skin sensitization.

Table-1. Assessment of skin reactions

Reaction	Irritation score
Erythema and eschar formation	
No erythema	0
Very slight erythema (barely perceptible)	1
Well-defined erythema	2
Moderate erythema	3
Severe erythema (beet-redness) to eschar formation preventing grading of erythema	4*

*Reactions such as necrosis, ulceration, alopecia, and healed scars were classified as deep damage and scored 4.

Reaction	Irritation score
Oedema formation	
No oedema	0
Very slight oedema (barely perceptible)	1
Well-defined oedema (edges of area well-defined by definite raising)	2
Moderate oedema (raised approximately 1 mm)	3
Severe oedema (raised more than 1 mm and extending beyond exposure area)	4

Table-2. Primary irritation index categories in a rabbit

Response category	P.I.I.
Negligible	0 to 0.4
Slight	0.5 to 1.9
Moderate	2 to 4.9
Severe	5 to 8

Table-3. Weight of test animals

Test animal	at the start of testing	at the end of observation
A	3.79kg	3.70kg
B	3.48kg	3.46kg
C	3.26kg	3.31kg

Table-4. Scoring results of skin reaction

Observation time	Test animal A		Test animal B		Test animal C	
	intact	injured	intact	injured	intact	injured
1 hour	0/0	0/0	0/0	0/0	0/0	0/0
24 hours	0/0	0/0	0/0	0/0	0/0	0/0
48 hours	0/0	0/0	0/0	0/0	0/0	0/0
72 hours	0/0	0/0	0/0	0/0	0/0	0/0

The results are shown in the order of erythema and eschar/edema.

JFRL

2021 年 05 月 19 日

試 験 報 告 書

依 頼 者 [redacted]

一般財団法人
日本食品分析センター
東京都渋谷区元代々木町52番1号

検　　体　　0-10（α トリノ水）

表　　題　　ウサギを用いる皮膚一次刺激性試験

2021 年 04 月 05 日当センターに提出された上記検体について試験した結果をご報告いたします。

ウサギを用いる皮膚一次刺激性試験

要　約

0-10（αトリノ水）を検体として，OECD Guideline for Testing of Chemicals 404(2015)に準拠し，ウサギを用いる皮膚一次刺激性試験を行った。

検体をウサギ3匹の無傷及び有傷皮膚に24時間閉鎖適用した。その結果，除去後1，24，48及び72時間の各観察時間において刺激反応は見られなかった。

ISO 10993-10:2010, Biological evaluation of medical devices - Part 10に従って求めた一次刺激性インデックス(P.I.I.)は0となった。

以上のことから，ウサギを用いる皮膚一次刺激性試験において，検体は「無刺激性」の範疇に入るものと評価された。

1　依 頼 者

[redacted]

2　検　　体

0-10（αトリノ水）

3　試験実施施設

一般財団法人日本食品分析センター　多摩研究所

東京都多摩市永山6丁目11番10号

4　試験期間

2021年04月05日～2021年05月19日

5　試験目的

検体について，OECD Guideline for Testing of Chemicals 404(2015)に準拠し，ウサギにおける皮膚一次刺激性を調べる。

6　試験動物

日本白色種雄ウサギを北山ラベス株式会社から購入し，1週間以上の予備飼育を行って一般状態に異常のないことを確認した後，皮膚に異常が認められない3匹を試験に使用した。試験動物はFRP製ケージに個別に収容し，室温23 ℃±3 ℃，照明時間12時間/日とした飼育室において飼育した。飼料はウサギ・モルモット用固型飼料[LRC4，オリエンタル酵母工業株式会社]を制限給与し，飲料水は水道水を自由摂取させた。

7　試験方法

各試験動物の体幹背部被毛を試験の約24時間前に剪毛した。

試験動物1匹につき，約6 cm^2の面積で4箇所を設定し，そのうち2箇所には18ゲージの注射針を用いて，真皮までは達しないように角化層に井げた状のすり傷を付け(有傷皮膚)，他の2箇所を無処置(無傷皮膚)とした。

約2 cm×3 cmに裁断したガーゼパッチに検体0.5 mLを均一に塗布し，無傷及び有傷皮膚の各1箇所ずつに適用した後，マルチフィックス・ロール[アルケア株式会社]で固定した。また，パッチが皮膚と接触するように，更にキープシルク[ニチバン株式会社]で保持した。残りの無傷及び有傷皮膚は対照とした。

適用時間は24時間とし，その後パッチを取り除き，適用部位を注射用水で清拭した。除去後1，24，48及び72時間に観察を行い，表-1に従って刺激反応の採点を実施した。

また，ISO 10993-10:2010, Biological evaluation of medical devices - Part 10に従って，パッチ除去後24，48及び72時間の採点値を合計して6で除し，更に各試験動物の平均を算出して一次刺激性インデックス(P.I.I.)とし，表-2に示した基準に基づき，検体の刺激性の評価を行った。

なお，試験開始時及び観察終了時に試験動物の体重を測定した。

8　試験結果(表-3及び4)

1)　試験動物①

無傷及び有傷皮膚で観察期間を通して刺激反応は見られなかった。

2)　試験動物②

無傷及び有傷皮膚で観察期間を通して刺激反応は見られなかった。

3)　試験動物③

無傷及び有傷皮膚で観察期間を通して刺激反応は見られなかった。

採点結果から算出したP.I.I.は，0となった。

なお，いずれの試験動物においても無処置の無傷及び有傷皮膚では，観察期間を通して刺激反応は見られなかった。

9　結　　論

検体について，OECD Guideline for Testing of Chemicals 404(2015)に準拠し，ウサギを用いる皮膚一次刺激性試験を行った。

その結果，除去後1，24，48及び72時間の各観察時間において刺激反応は見られなかった。

ISO 10993-10:2010, Biological evaluation of medical devices - Part 10に従って求めた一次刺激性インデックス(P.I.I.)は0となった。

以上のことから，ウサギを用いる皮膚一次刺激性試験において，検体は「無刺激性」の範疇に入るものと評価された。

10　参考文献

・ ISO 10993-10:2010, Biological evaluation of medical devices - Part 10: Tests for irritation and skin sensitization.

表-1　皮膚反応の評価

紅斑及び痂皮の形成

紅斑なし……0
非常に軽度な紅斑(かろうじて識別できる)……1
はっきりした紅斑……2
中等度から高度紅斑……3
高度紅斑(暗赤色)から紅斑の採点を妨げる痂皮の形成……4*

[最高点4]

＊　壊死，潰瘍，脱毛，瘢痕等の反応は深部損傷として点数4に分類した。

浮腫の形成

浮腫なし……0
非常に軽度な浮腫(かろうじて識別できる)……1
軽度浮腫(はっきりした膨隆による明確な縁が識別できる)……2
中等度浮腫(約1 mmの膨隆)……3
高度浮腫(1 mm以上の膨隆と曝露範囲を超えた広がり)……4

[最高点4]

表-2　ウサギにおける一次刺激反応のカテゴリー

反応のカテゴリー	P. I. I.
無刺激性	0～0.4
弱い刺激性	0.5～1.9
中等度の刺激性	2～4.9
強い刺激性	5～8

表-3　試験動物の体重

試験動物	試験開始時	観察終了時
①	3.79	3.70
②	3.48	3.46
③	3.26	3.31

単位：kg

表-4　皮膚反応の採点結果

観察時間	試験動物①		試験動物②		試験動物③	
	無傷	有傷	無傷	有傷	無傷	有傷
1時間	0/0	0/0	0/0	0/0	0/0	0/0
24時間	0/0	0/0	0/0	0/0	0/0	0/0
48時間	0/0	0/0	0/0	0/0	0/0	0/0
72時間	0/0	0/0	0/0	0/0	0/0	0/0

結果は紅斑・痂皮/浮腫の順に示した。

以　上

7th June 2021

Test report

Japan Food Research Laboratories
52-1 Motoyoyogi-cho, Shibuya-ku, Tokyo 151-0062, Japan

Sample: T-Water

Title: Virus inactivation test

We are pleased to report the test results of the above specimens submitted to our center on 5th April 2021.

Virus inactivation test

1. Client

2. Sample

T-Water

3. Test purpose

The virus solution was added to the specimen and mixed (hereinafter referred to as "test solution"). The viral infection titer in the test solution was measured after a predetermined time. In addition, a preliminary test was conducted to examine the method for measuring the virus infection titer.

4. Test results

1) Preliminary test (confirmation of neutralization conditions)

By diluting the test solution with cell maintenance medium, it was confirmed that the virus infection titer could be measured without being affected by the specimen.

2) Measurement of viral infection titer

The results are shown in Table-1. The cells and media used are shown in Table-2, and the test conditions are shown in Table-3.

Table-1. Results of virus infection titer measurement of test solution

Test virus	Sample	log $TCID_{50}$/mL	
		Start	30 seconds later
Feline calicivirus*	T-Water	-	4.5
	Control (purified water)	6.5	6.5

$TCID_{50}$: median tissue culture infectious dose

Storage temperature: Room temperature

*Alternative virus to norovirus

Table-2. Cells and media used

Cells	CRFK cells [Sumitomo Dainippon Pharma Co., Ltd.]
Cell growth medium	10% fetal bovine serum Eagle MEM medium "Nissui" (1) [Nissui Pharmaceutical Co., Ltd.]
Cell maintenance medium	2% fetal bovine serum Eagle MEM medium "Nissui" (1) [Nissui Pharmaceutical Co., Ltd.]

Table-3. Test conditions

Test virus	Feline calicivirus F-9 ATCC VR-782
Virus solution	Supernatant fluid obtained by centrifuging the virus culture medium after cell culture
Test solution sample	Add 0.1 mL of virus solution to 1 mL of sample
Contact conditions	30 seconds (room temperature)
Neutralization conditions	10-fold dilution in cell maintenance medium
Control	Purified water
Infection titer measurement method	TCID50 method

Test report on the inactivation effect of test materials on viruses

Test No.217125N

Shokukanken Inc.

561-21 Arakuchi-machi, Maebashi City, Gunma prefecture 379-2107, Japan

1. Title

Testing the inactivation effect of test materials on viruses

2. Test number

No.217125N

3. Objective

This study was conducted to confirm the virus inactivation effect when the test materials were reacted with novel coronavirus (SARS CoV 2).

4. Test management organization

Name, address and name of the head of the implementing agency

Name of Company: Shokukanken Inc.

Address: 61-21 Arakuchi-machi, Maebashi City, Gunma prefecture 379-2107 Japan

Name: Representative Director　Kazuhiro Kubo

Name of principal investigator: Shohei Matsumoto

Name of study investigator: Shori Endo

5. Test schedule

Exam Registration Date: 10th May 2021

Test start date: 26th November 2021

Test end date: 21st December 2021

6. Test materials

Test material A: T-Water (concentration: 20 ppm)

Test material B: T-Water (concentration: 10 ppm)

Sterile phosphate buffer solution was used as a control material.

7. Microorganisms to be tested

SARS CoV 2 (novel coronavirus)

*Human-derived isolates: Virus strains isolated from saliva using Vero cells and cultured to confirm amplification of the SARS CoV 2 gene using real-time PCR (method notified by the Ministry of Health, Labor and Welfare).

Cultured cell: Vero cells (African green monkey kidney epithelium-derived cell line)

8. Sample setup

Sample	Treatment	Contact time
Control	Add 1 mL of virus solution to 10 mL of phosphate buffer solution	0, 30 min
Sample A	Add 1 mL of virus solution to 10 mL of test material A	30 min
Sample B	Add 1 mL of virus solution to 10 mL of test material B	30 min

9. Test method

The test was conducted with reference to "Virus Neutralization Test Method in Virus Laboratory Science, Revised Second Edition".

10. Test procedure

1) Preliminary test

Before the test, each material was diluted 10 times, inoculated into cultured cells, and cultured for 5 days at 37 °C under 5% CO_2. If the cultured cells did not show normal shape, it was judged that the material was cytotoxic, and the dilution factor at which cytotoxicity was confirmed was excluded from the test judgment.

As a result, no cytotoxicity was observed in the 10-fold dilution. As a result, no cytotoxicity was

observed in the 10-fold dilution. Therefore, the detection limit in this study was set at $10^{1.5}$ $TCID_{50}$/mL.

2) Main test: Test solution mixing

According to the sample setting, 10 mL of each of the test materials and phosphate buffer solution were separated, and 1 mL of virus solution was added.

After the addition of the virus solution, the mixture was allowed to stand at room temperature (25 °C) for a predetermined period of time.

3) This test: Cell inoculation

A 10-fold dilution of the sensitized mixture was made for each test sample, and 100 μL of the mixture was inoculated into cells cultured in 96-well plates.

After 5 days of incubation at 37°C and carbon dioxide gas (5%), the cultured cells were observed under a microscope, and the presence or absence of viral replication was confirmed by CPE (cell degeneration) that appeared on the cultured cells, and the concentration was calculated.

4) Evaluation

In the test results, the percentage reduction (%) of the sample against the control was calculated for each test point to confirm the effect.

In this study, the percentage reduction was calculated by the following formula.

$$\text{Percentage reduction (\%)} = \frac{\text{Control - Sample}}{\text{Control}} \text{ x100}$$

11. Resalt

The results of the test against SARS CoV 2 are shown in Table 1 and Figure 1.

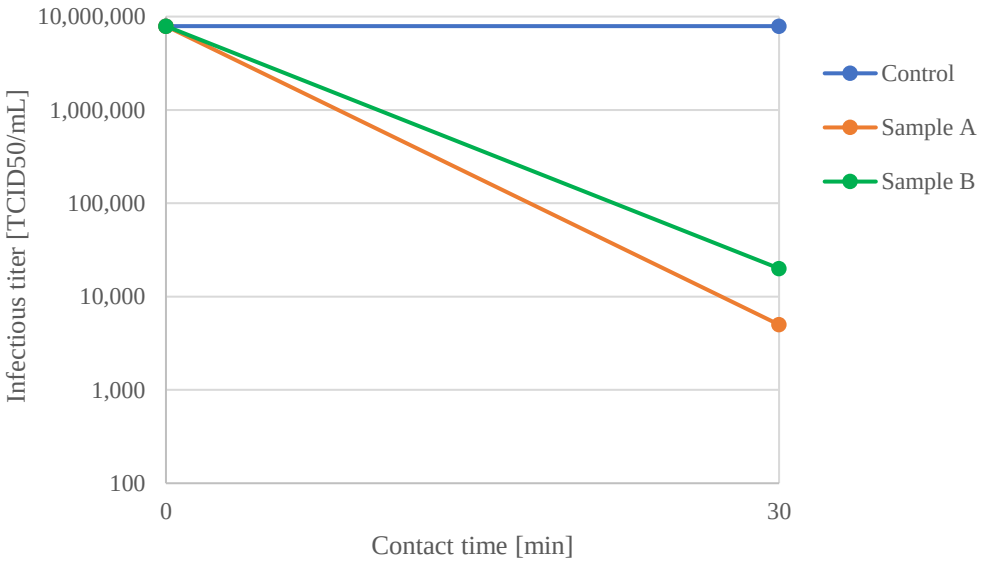
In the control group, there was no change in the amount of virus from the start of the test to 30 minutes after the start ($10^{6.9}$ $TCID_{50}$/mL).

Sample A had $10^{3.7}$ $TCID_{50}$/mL (99.93% decrease) after 30 minutes, and sample B had $10^{4.3}$ $TCID_{50}$/mL (99.74% decrease) after 30 minutes.

Table 1. Test results of SARS CoV 2

Specimen	Initial [TCID50/mL]	after 30min [TCID50/mL]	Reduction rate
Control	$10^{6.9}$ (7,900,000)	$10^{6.9}$ (7,900,000)	-
Sample A (20 ppm)	$10^{6.9}$ (7,900,000)	$10^{3.7}$ (5,000)	99.93%
Sample B (10 ppm)	$10^{6.9}$ (7,900,000)	$10^{4.3}$ (20,000)	99.74%

Figure 1. Test results of SARS CoV 2



12. Considerations

In this study, we tested the inactivation effect of the test materials against SARS CoV 2 (novel coronavirus).

As a result, it was found that Test Material A (20 ppm T-Water) and Test Material B (10 ppm T-Water) had 99.93% and 99.74% inactivation effect, respectively, after 30 minutes of reaction.

InnoX
Katsukawa Bldg.,2F, 2-12-15 Marunouchi
Naka-ku, Nagoya, Japan 460-0002

20th January 2022

DECLARATION

I, Tomoharu Inoue, do hereby solemnly and sincerely declare :

1. That I am well acquainted with the Japanese and English languages, and

2. That the attached document :

Test report

is a true translation from the original Japanese text.

And I make this solemn declaration conscientiously believing the same to be true and correct.

InnoX Co., Ltd.

T. Inoue

Tomoharu Inoue

Test report

No.1190803

Test sponsor	Address	2-14-10 Kugahara, Ota-ku, Tokyo		
	Name	Japan Techno Corporation		
Sample	Name	Neutral Electrolyzed Water (α Torino Water 5ppm)	Quantity	16
	Specifications			
Requested item	Viable bacteria count			

We hereby certify that the results of the above test, which was requested on 30th August 2007, are in agreement with the following.

13th September 2007

Director General, Bureau of Industrial and Labor Affairs,

Tokyo Metropolitan Government

The results of the test are shown in the Appendix.

No. 19-179

Test Result

The results of the tests requested as of 30th August 2007 are as follows.

13th September 2007

Director, Tokyo Metropolitan Food Technology Center

Product name: Neutral Electrolyzed Water (α Torino Water 5ppm)

Test contents	Result	Test method
Testing the bactericidal effect of Neutral Electrolyzed Water (α Torino Water 5ppm) Viable bacteria count Escherichia coli (JCM 1649)		Bacteria of Escherichia coli (JCM 1649), Salmonellae enterica (JCM 1652), Pseudomonas aeruginosa (JCM 5516), and Staphylococcus aureus (JCM 2413) cultured in trypticase-soy broth medium were washed by centrifugation with sterile distilled water and resuspended in sterile distilled water to prepare bacterial suspensions. For each bacterium, 0.4 mL of the bacterial suspension was added to 39.6 mL of sterile distilled water and 39.6 mL of submitted Electrolyzed Water, respectively, and stirred. The number of viable bacteria in sterile distilled water was diluted with sterile phosphate buffered saline. The number of viable bacteria in Electrolyzed Water was measured by the plate mixing method (35°C, 48 hours, aerobic incubation) using trypticase-soy agar medium immediately after treatment without dilution after standing for a certain period of time as indicated.
Electrolyzed Water untreated	1.3×10^7 /mL	
Electrolyzed Water treated (30 seconds)	< 30 /mL*	
Electrolyzed Water treated (60 seconds)	< 30 /mL*	
Electrolyzed Water treated (180 seconds)	< 30 /mL*	
Salmonella enterica (JCM 1652)		
Electrolyzed Water untreated	9.6×10^6 /mL	
Electrolyzed Water treated (30 seconds)	< 30 /mL*	
Electrolyzed Water treated (60 seconds)	< 30 /mL*	
Electrolyzed Water treated (180 seconds)	< 30 /mL*	

next page

Test contents	Result	Test method
Testing the bactericidal effect of Neutral Electrolyzed Water (α Torino Water 5ppm) Viable bacteria count Pseudomonas aeruginosa (JCM 5516) Electrolyzed Water untreated Electrolyzed Water treated (30 seconds) Electrolyzed Water treated (60 seconds) Electrolyzed Water treated (180 seconds) Staphylococcus aureus (JCM 2413) Electrolyzed Water untreated Electrolyzed Water treated (30 seconds) Electrolyzed Water treated (60 seconds) Electrolyzed Water treated (180 seconds)	 2.6×10^5 /mL < 30 /mL* < 30 /mL* < 30 /mL* 6.5×10^6 /mL < 30 /mL* < 30 /mL* < 30 /mL*	Bacteria of Escherichia coli (JCM 1649), Salmonella enterica (JCM 1652), Pseudomonas aeruginosa (JCM 5516), and Staphylococcus aureus (JCM 2413) cultured in trypticase-soy broth medium were washed by centrifugation with sterile distilled water and resuspended in sterile distilled water to prepare bacterial suspensions. For each bacterium, 0.4 mL of the bacterial suspension was added to 39.6 mL of sterile distilled water and 39.6 mL of submitted Electrolyzed Water, respectively, and stirred. The number of viable bacteria in sterile distilled water was diluted with sterile phosphate buffered saline. The number of viable bacteria in Electrolyzed Water was measured by the plate mixing method (35°C, 48 hours, aerobic incubation) using trypticase-soy agar medium immediately after treatment without dilution after standing for a certain period of time as indicated.
* No colony formation was observed in the measurement using 1 mL of the stock solution (two replicates).		

The above results are based on the testing of the submitted test samples. The product names and specifications are based on the test request form.

第6号様式(第3条関係)

成　績　証　明　書

第　1190803　号

依頼者	住　所	東京都大田区久が原 2-14-10		
	氏　名	日本テクノ 株式会社		
依頼品	品　名	中性電解水「αトリノ水 5 ppm」	数　量	16
	仕　様			
依頼事項	生菌数 以下余白			

19 年　8 月　30 日付けで依頼を受けた上記の試験の成績は、下記のとおり相違ないことを証明します。

19 年 9 月 13 日

東京都産業労働局長

佐 藤　　広

記

別紙試験結果のとおりである。

(注) 広告等への名義使用手続きについて
広告、掲示、印刷物等にセンターの試験済その他これに類する文字を使用しようとする者は、あらかじめ名義使用申請書を発行者に提示し、その承認を受けて下さい。

１９農振財食１７９号

試　　験　　結　　果

平成１９年８月３０日付けで依頼を受けた試験の結果は次のとおりである。

平成１９年９月１３日

東京都立食品技術センター所長　　沼田 邦雄

品名：　中性電解水「αトリノ水 5 ppm」

試　験　項　目　等	結　　果	注	試　験　方　法
中性電解水「α トリノ水 5 ppm」の殺菌効果試験			トリプチケースソイブロス培地にて増菌培養した大腸菌 *Escherichia coli* JCM 1649, サルモネラ *Salmonella enterica* JCM 1652, 緑膿菌 *Pseudomonas aeruginosa* JCM 5516, 黄色ブドウ球菌 *Staphylococcus aureus* JCM 2413 それぞれの菌体を，滅菌蒸留水を用いて遠沈洗浄後，滅菌蒸留水に再懸濁して菌懸濁液を調製した。各菌について，菌懸濁液 0.4 mL ずつを，滅菌蒸留水 39.6mL 及び提出された中性電解水 39.6mL にそれぞれ添加し攪拌した。滅菌蒸留水中の生菌数は滅菌リン酸緩衝生理食塩水を用いて段階希釈を行い，また中性電解水中の生菌数は表記一定時間静置処理したのちに希釈せずに処理原液について直ちに，トリプチケースソイ寒天培地を用いた平板混釈法（35℃, 48 時間，好気培養）により測定した。
生菌数			
大腸菌 *Escherichia coli* JCM 1649			
電解水 無処理	1.3×10^{7} /mL		
電解水 処理（30 秒間）	30 /mL 以下	1	
電解水 処理（ 1 分間）	30 /mL 以下	1	
電解水 処理（ 3 分間）	30 /mL 以下	1	
サルモネラ *Salmonella enterica* JCM 1652			
電解水 無処理	9.6×10^{6} /mL		
電解水 処理（30 秒間）	30 /mL 以下	1	
電解水 処理（ 1 分間）	30 /mL 以下	1	
電解水 処理（ 3 分間）	30 /mL 以下	1	

次　葉

試　験　項　目　等	結　　果	注	試　験　方　法
中性電解水「α トリノ水 5 ppm」の殺菌効果試験			
生菌数			
緑膿菌 *Pseudomonas aeruginosa* JCM 5516			
電解水 無処理	2.6×10^{5} /mL		トリプチケースソイブロス培地にて増菌培養した大腸菌 *Escherichia coli* JCM 1649, サルモネラ *Salmonella enterica* JCM 1652, 緑膿菌 *Pseudomonas aeruginosa* JCM 5516, 黄色ブドウ球菌 *Staphylococcus aureus* JCM 2413 それぞれの菌体を, 滅菌蒸留水を用いて遠沈洗浄後, 滅菌蒸留水に再懸濁して菌懸濁液を調製した。各菌について, 菌懸濁液 0.4 mL ずつを, 滅菌蒸留水 39.6mL 及び提出された中性電解水 39.6mL にそれぞれ添加し攪拌した。滅菌蒸留水中の生菌数は滅菌リン酸緩衝生理食塩水を用いて段階希釈を行い, また中性電解水中の生菌数は表記一定時間静置処理したのちに希釈せずに処理原液について直ちに, トリプチケースソイ寒天培地を用いた平板混釈法（35℃, 48 時間, 好気培養）により測定した。
電解水 処理（30 秒間）	30 /mL 以下	1	
電解水 処理（ 1 分間）	30 /mL 以下	1	
電解水 処理（ 3 分間）	30 /mL 以下	1	
黄色ブドウ球菌 *Staphylococcus aureus* JCM 2413			
電解水 無処理	6.5×10^{6} /mL		
電解水 処理（30 秒間）	30 /mL 以下	1	
電解水 処理（ 1 分間）	30 /mL 以下	1	
電解水 処理（ 3 分間）	30 /mL 以下	1	
以下余白	以下余白		以下余白

注 1 :　処理液原液 1mL を用いた測定（２連）において、コロニー形成は認められなかった。

上記の結果は，提出された検査試料について試験したものであり，品名及び仕様は，試験等依頼書に基づき記載したものです。

以　上

Evaluation of antiviral activity of α E-Water (agitated oscillating fluidized electrolytic water)

[Viruses used]

Influenza A virus

[Sample]

α E-Water Residual chlorine 30ppm

α E-Water Residual chlorine 50ppm

α E-Water Residual chlorine 100ppm

[Contact time]

0 min, 30 seconds

[Test results]

Chlorine concentration (ppm)	Virus infection titer (TID_{50}/mL)	
	0 min	30 seconds
0	$7.4 * 10^4$	$71. * 10^4$
30		$1.0 * 10^2$
50		$2.6 * 10$
100		< 6.3

Kitasato Research Center for Environmental Science

(15 May 2009)

αトリノ一ST水（攪拌振動流動電解水）の抗ウイルス活性評価

【評価ウイルス】

A型インフルエンザウイルス

【使用抗菌電解水】

αトリノ一ST水　残留塩素　30ppm

αトリノ一ST水　残留塩素　50ppm

αトリノ一ST水　残留塩素　100ppm

【接触時間】

0分、30秒

【結果】

残留塩素濃度　(ppm)	ウイルス感染価 ($TCID_{50}$/mL)	
	0分	30秒
0	$7.4*10^4$	$7.1*10^4$
30		$1.0*10^2$
50		2.6*10
100		<6.3

北里環境科学センター

(2009/5/15)

【試験結果速報】

日本テクノ株式会社 様

2020.04.20

一般財団法人 北里環境科学センター

1. 試験名：「αトリノ中性電解水」によるネココロナウイルス不活化試験

2. 試験内容：電解水を用いて懸濁試験によるウイルスの不活化効果を評価した

3. 試験品：「αトリノ中性電解水」（有効塩素濃度 30, 50, 100ppm の 3 種類）

4. 試験方法概要：

＜供試ウイルス＞

ネコ腸コロナウイルス（Feline enteric coronavirus, WSU 79-1683株）

＜ウイルス不活化試験＞

① 試験品 0.9mL にウイルス液 0.1mLを混合し、所定時間作用させる。

② 作用後、作用液を希釈あるいは、チオ硫酸ナトリウム加緩衝液を加え、試験品のウイルスに対する作用を停止させた。

③ ②の液を感染価測定用試料の原液としてTCID50法で感染価を測定した。

5. 試験結果

試験品のネココロナウイルス不活化試験結果

試験品	塩素濃度	感染価		感染価 対数減少値
		0（初期）	30 秒後	
「αトリノ中性電解水」	30ppm		＜ 6.3	＞ 4.3
	50 ppm		＜ 6.3	＞ 4.3
	100 ppm		＜ 6.3	＞ 4.3
対照（PBS）		1.4E+05	6.3E+04	0.3

感染価単位： TCID50/mL

検出限界値： 6.3 TCID50/mL

感染価対数減少値： log10（初期感染価/30秒作用後の感染価）

以上

[Preliminary Exam Results]

To: Nihon Techno Corporation

20 April 2020

Kitasato Research Center for Environmental Science

1. Test title: Inactivation test of feline coronavirus using "α E-Water"

2. Test details: Evaluation of virus inactivation effect by suspension test using electrolyzed water.

3. Test product: "α E-Water" (3 types of effective chlorine concentration: 30, 50, and 100 ppm)

4. Test Method Summary:

[Viruses used]

Feline enteric coronavirus (WSU 79-1683)

[Virus inactivation test]

(1) Mix 0.9 mL of the test product with 0.1 mL of the virus solution and allow it to act for a specified time.

(2) After the action, dilute the working solution or add sodium thiosulfate buffer solution to stop the action of the test product on the virus.

(3) The solution from step 2 was used as the stock solution of the sample for measuring the infection titer, and the infection titer was measured by the TCID50 method.

5. Test results

Results of feline coronavirus inactivation tests on test products

Test product	Chlorine concentration	Virus infection titer		Log reduction value of virus infection titer
		0 (initial)	After 30 seconds	
α E-Water	30ppm		< 6.3	> 4.3
	50ppm		< 6.3	> 4.3
	100ppm		< 6.3	> 4.3
Control (PBS)		1.4×10^5	6.3×10^4	0.3

Infection titer unit: TCID50/mL

Detection limit: 6.3 TCID50/mL

Log reduction value of virus infection titer: $\log_{10}\left(\frac{\text{initial infection titer}}{\text{infection titer after 30 seconds}}\right)$