

Quantum-ion®

이메이션

Resonance Technology
Antimicrobial Spray

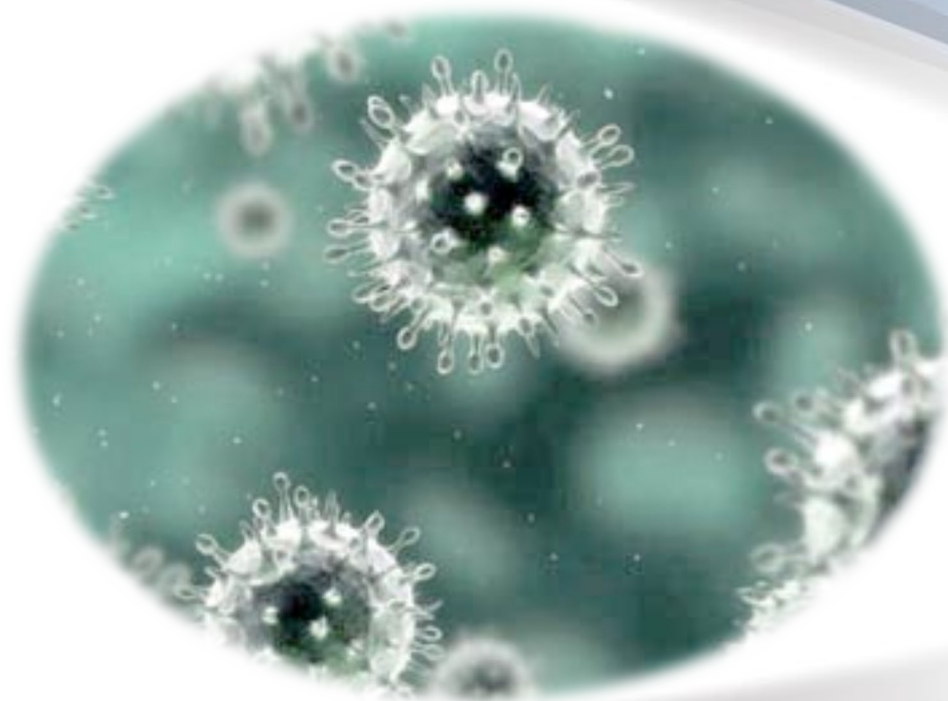
- ⊘ Anti-Bacterial
- ⊘ Anti-Fungal
- ⊘ Anti-Virus
- ⊘ Self Activated

*Kill 99.99% Coronavirus Strain.
Last up to 30-days.*

世界首创 “量子共振纳米银离子配方”

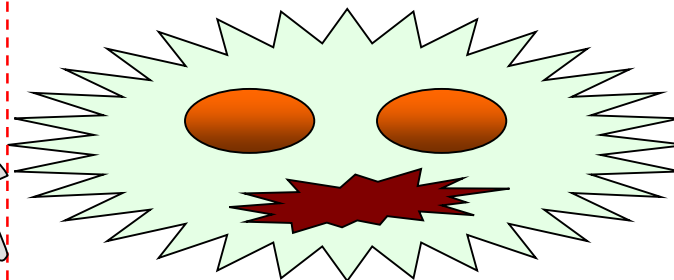
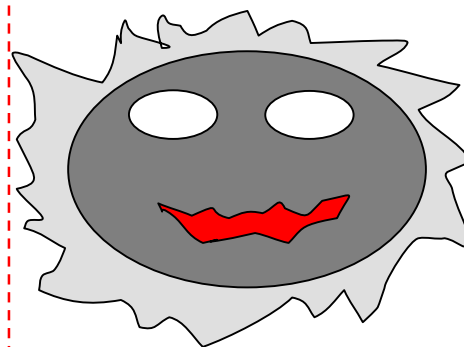
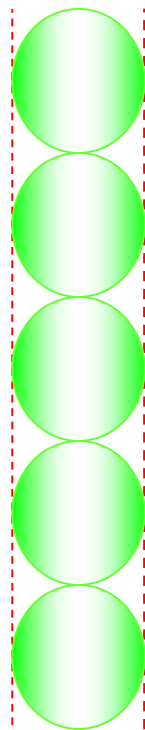
“比传统的银离子更快更有效的消除细菌和病毒”

- **Quantum Ion** 是一种可以喷涂在物体表层来达到消毒和抗菌的科技创新液体。使人活得更健康更安全。
- **Quantum Ion** 应用简单。在喷涂前先把需要处理的表面清洁干净，喷涂后，表面所有微生物就会有效的被除去。
- **Quantum Ion** 的主要成分有纳米银离子和净化水。除此之外，液体也注入了量子共振能量来增加其功效。对人体无任何害处。



纳米银离子

纳米材料的体积远
比病毒和害菌小。
这增加其接触病毒
和害菌的几率。



普通病菌:
20 – 100nm

普通害菌:
100 – 1000nm

纳米 Ag⁺ 和 TiO₂ 的尺寸 < 10nm
1g 的表面积 = 50sq.m.

0 nm

10 nm

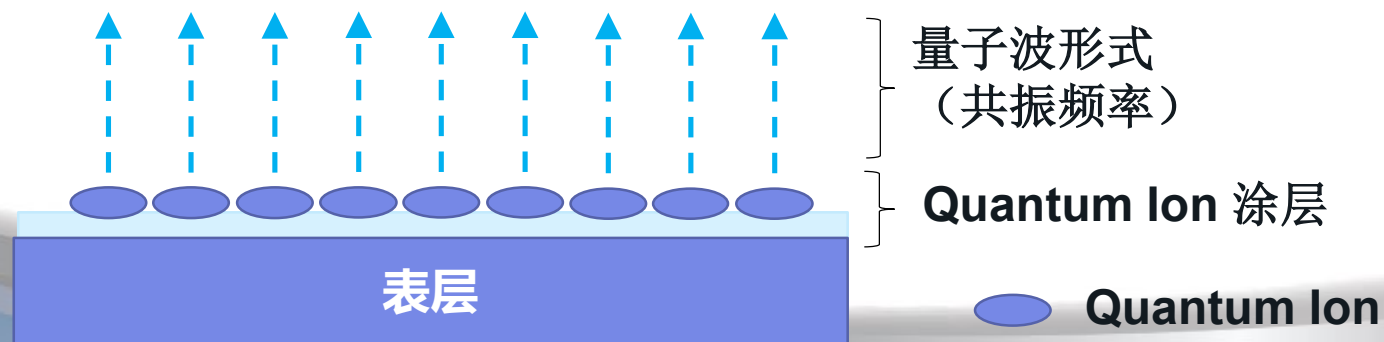
20 nm

100 nm

1000 nm

世界首创: *Quantum Ion*共振技术

- 产品科技基于融合共振技术，使用专有工艺为产品注入最佳有效频率。
- 细菌和病毒等病原体在共振的能量下会被消灭



量子共振杀菌抗菌黑科技

“纳米银离子和共振技术于一体的黑科技”

更有效

抗菌 - 3小时 不间断地杀灭细菌和病毒。

净化空气 - 有效去除挥发性有机化合物(VOCs)。

除臭效果 - 去除由废物和细菌引起的恶臭。

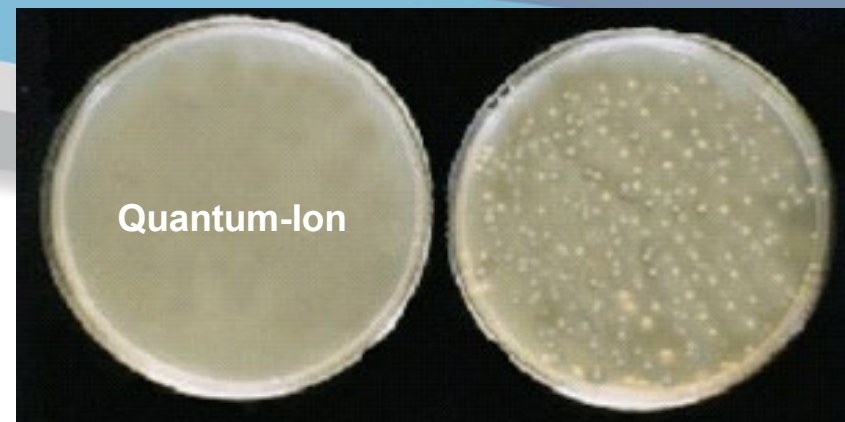
实验研究结果

纳米银离子喷雾剂，具有强大的灭菌能力，可以：

- 破坏细菌的细胞膜，导致细胞质的泄漏，并导致细菌死亡，以及
- 凝固病毒蛋白并抑制其活性。

细菌类型	耐甲氧西林金黄色葡萄球菌 (MRSA)	大肠杆菌 (E.Coli)	肺炎克雷伯菌 (Klebsiella pneumoniae)
杀伤率 %	>99.9	>99.9	>99.9

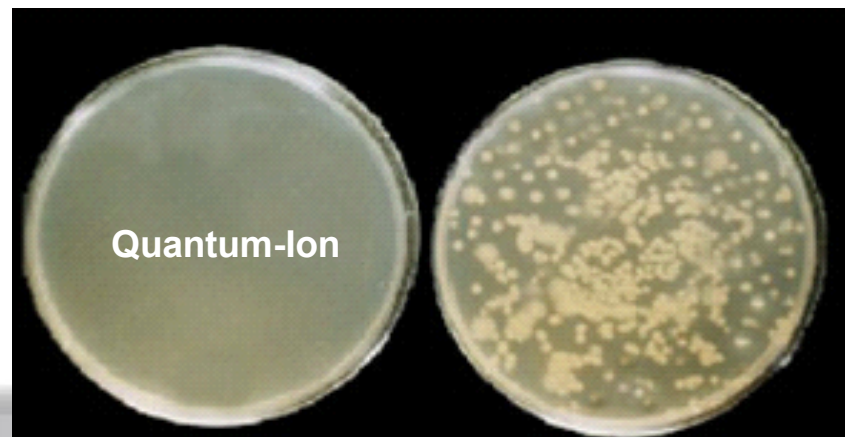
10小时MRSA培养



左：经过
Quantum Ion处理

右：没经过处理

10小时肺炎克雷伯菌培养



左：经过
Quantum Ion处理

右：没经过处理

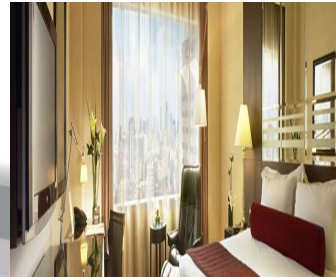
应用范围或领域



产品（口罩，衣物，厕所，门把手，手机...）

项目（商业，幼儿园，住宅，汽车，医院...）

适合各年龄层包括孕妇，小孩，年长者等...



NOTE OF CERTIFICATION

DATE: 18 February 2020

This note serves to certify the following:

1. We have tested the solution **Quantum-ion** under laboratory conditions and found that **Quantum-ion** was 99.99% efficient in degrading the human coronavirus OC43 (CoV-OC43) and viral RNA when exposed to direct contact with the virus.

Professor Dr David Perera
Director

马来西亚砂拉越大学测试报告1

Quantum Ion 成功杀灭冠状病毒 99.99%

DATE: 18 February 2020

This note serves to certify the following:

1. We have tested the solution **Quantum-ion** under laboratory conditions and found that **Quantum-ion** was 99.99% efficient in degrading the human coronavirus OC43 (CoV-OC43) and viral RNA when exposed to direct contact with the virus.

马来西亚砂拉越大学测试报告2

Institut Kesihatan dan Perubatan Komuniti
Institute of Health and Community Medicine

UNIVERSITI MALAYSIA SARAWAK
UNIMAS

www.unimas.my

NOTE OF CERTIFICATION

DATE: 11 February 2020

This note serves to certify the following:

1. We have tested the solution **Quantum-ion** under laboratory conditions and found that **Quantum-ion** was 99.99% efficient in degrading the human enterovirus A71 (EV-A71) and viral RNA when exposed to direct contact with the virus.


Professor Dr David Perera
Director

MSC-Status

94300 Kota Samarahan, Sarawak, MALAYSIA | Tel + 60 82 581 000 | Faks + 60 82 671 785



Quantum Ion 成功杀灭手足口病毒
99.99%(HFMD)

DATE: 11 February 2020

This note serves to certify the following:

1. We have tested the solution **Quantum-ion** under laboratory conditions and found that **Quantum-ion** was 99.99% efficient in degrading the human enterovirus A71 (EV-A71) and viral RNA when exposed to direct contact with the virus.



Teknologi Kimia Chemical Technology 化学工艺

CHEMICAL LABORATORY (MALAYSIA) SDN BHD (27822-K)
81-85 (2nd & 3rd Floor), Jalan SS25/2, Taman Bukit Emas, 47301 Petaling Jaya, Selangor Darul Ehsan, Malaysia.
Tel: 03-7803 2229, 7803 9582, 7803 0386 Fax: 03-7803 2303
E-mail: chq@chemlab.com.my Homepage: <http://www.chemlabgroup.com>

ASSAYERS, ANALYTICAL CHEMISTS, MICROBIOLOGISTS AND INDUSTRIAL CONSULTANTS (GST: 00183965856)

Executive Chairman:
Dato' Dr. F.W. Kam
Ph.D., C.Chem., C.Sci., FRSC, FRACI, FIFST, FIMMM, FRSH, FCMi, FEI, FMIC, FPRIM, FPRIS, FMOSTA

President & CEO:
Dato' Marcus K.F. Kam B.E. (Hons.), M.Sc., C.Chem., FRACI, MRSC, MBA, AMIChemE.
Executive Director:
Datin P.K. Wong Dip. NIOA, FRSH, FCMi, FEI

CERTIFICATE OF ANALYSIS

Company : M/s. EVA Energy Sdn. Bhd.
5, Jalan Kempas Lama 1,
Off Jalan Kempas Lama,
81300 Johor Bahru, Johor Darul Takzim.

Lab No. : PJ-D/MS/1223/17 (A)

Page : 1 of 2

Sample Description : One (1) sample of Liquid Solution
Sample Marking : Nano G VirusGard
Date Sample Received : 17th February 2017
Date Analyzed : 22nd February 2017 – 27th February 2017
Date Reported : 27th February 2017

BACTERIOLOGICAL ANALYSIS :

Micro Kill Test

Procedure :

- 1) Prepare inoculum of organism below at 10⁶ cfu/ml.
 - a) *Staphylococcus aureus* ATCC 6538
 - b) *Pseudomonas aeruginosa* ATCC 9027
 - c) *Escherichia coli* ATCC 8739
 - d) *Candida albicans* ATCC 10231
 - e) *Aspergillus niger* ATCC 16404
- 2) Prepare the sample into five (5) portions by transferring 9 ml of sample and inoculate 1 ml of each inoculum above into product respectively and shake vigorously.
- 3) Proceed with serial dilution by transferring 1 ml from 1:10 dilution into 9 ml sterile saline up to necessary dilution.
- 4) Pipette 1 ml of each dilution into duplicate plates.
- 5) Pour approximately 15-20 ml of Tryptic Soy Agar (Bacteria) and Sabouraud Dextrose agar (fungal) into all plates and allow it to solidify.
- 6) Incubate all plates at 35°C for 48 hours (Bacteria) and 25°C for 120 hours (fungal), count the colonies observed after completion of incubation.
- 7) Initial count for each inoculum was also recovered.
- 8) Calculate the percentage of kill for all organisms as follows :
$$\frac{\text{Initial Count} - \text{Count of organism survive}}{\text{Initial Count}} \times 100\%$$


Sam Loo Y. M.
B.Sc., AMIC
QA Manager

THE ABOVE ANALYSIS IS BASED SOLELY ON THE SAMPLES SUBMITTED BY THE CUSTOMER
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Fax: 07-3543527

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04-6467912
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282 Rainree Office Garden, B3 Building, 3rd Floor,
301 Boonjong 4, Rama IX Road, Bangkok, Hanykwang,
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CERTIFICATE OF ANALYSIS

Company : M/s. EVA Energy Sdn. Bhd.
5, Jalan Kempas Lama 1,
Off Jalan Kempas Lama,
81300 Johor Bahru, Johor Darul Takzim.

Lab No. : PJ-D/MS/1223/17 (B)

Page : 2 of 2

Sample Description : One (1) sample of Liquid Solution
Sample Marking : Nano G VirusGard
Date Sample Received : 17th February 2017
Date Analyzed : 22nd February 2017 – 27th February 2017
Date Reported : 27th February 2017

MICROBIOLOGICAL ANALYSIS :

Micro Kill Test

RESULTS :

Organism Tested	Contact Time	Initial Count, cfu/ml (A)	Count of survive organism, cfu/ml (B)	Percentage of kill, $\frac{(A)-(B)}{(A)} \times 100\%$ (A)
<i>Escherichia coli</i> ATCC 8739	After 1 minutes	4.8×10^6	1.2×10^5	97.50%
	After 5 minutes		2.5×10^1	99.99%
	After 10 minutes		0	>99.99%
<i>Staphylococcus aureus</i> ATCC 6538	After 1 minutes	9.0×10^5	7.6×10^3	99.15%
	After 5 minutes		0	>99.99%
	After 10 minutes		0	>99.99%
<i>Pseudomonas aeruginosa</i> ATCC 9027	After 1 minutes	1.3×10^5	1.6×10^4	87.69%
	After 5 minutes		1.6×10^4	87.69%
	After 10 minutes		1.4×10^4	89.23%
<i>Candida albicans</i> ATCC 10231	After 1 minutes	9.6×10^5	8.2×10^3	99.14%
	After 5 minutes		6.8×10^3	99.29%
	After 10 minutes		4.1×10^3	99.57%
<i>Aspergillus niger</i> ATCC 16404	After 1 minutes	8.4×10^5	6.8×10^3	99.19%
	After 5 minutes		4.2×10^3	99.50%
	After 10 minutes		2.6×10^3	99.69%

Test Method : In-House Method based on United States Pharmacopoeia 28


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QA Manager

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301 Boonjong 4, Rama IX Road, Bangkok, Hanykwang,
Bangkok 10310 Thailand.
Tel: (662) 719-6488-92
Fax: (662) 719-6483

Quantum Ion
证明在5分钟
内对细菌和霉
菌的杀伤率达
到 99.99%

ASTAR LABORATORY PTE LTD
ENVIRONMENTAL CONSULTANTS & TESTING

27 Gul Avenue, Singapore 629667
Tel: 63396136 Fax: 62557608 Email: admin@astarlab.com.sg
Company Registration No. & GST: 201323826G

TEST REPORT NO: ASL-M176-19-S

Company Name : Life3 Pte Ltd
Address : 17 Kaki Bukit Place, Singapore 416195
Date Received : 03 May 2019
Date Tested : 03 May – 13 May 2019
Date Reported : 14 May 2019
Sample Description : One (1) sample said to be Quantum Ion Series

Sample was submitted by client on 03 May 2019 in a plastic container marked as:

Quantum Ion Series N2001

On analysis, the following results were obtained:

Test Microorganism	Initial Bacterial Load, cfu/mL	Log ₁₀
Salmonella Typhimurium ATCC 14028	6.1 x 10 ⁶	8.79
Staphylococcus aureus ATCC 25923	1.3 x 10 ⁹	9.11
Candida Albicans ATCC 10231	4.1 x 10 ⁶	6.61

Contact Time: 5 minutes, no dilution

Test Microorganism	Count of Surviving Test Microorganism, CFU/ml (Log ₁₀)	Log Reduction	Percentage Kill of Test Microorganism, %
Staphylococcus aureus ATCC 25923	<10 (1.0)	> 8.11	> 99.9999
Salmonella Typhimurium ATCC 14028	<10 (1.0)	> 7.79	> 99.9999
Candida Albicans ATCC 10231	<10 (1.0)	> 5.61	> 99.9999

ASTAR LABORATORY PTE LTD
ENVIRONMENTAL CONSULTANTS & TESTING

27 Gul Avenue, Singapore 629667
Tel: 63396136 Fax: 62557608 Email: admin@astarlab.com.sg
Company Registration No. & GST: 201323826G

TEST REPORT NO: ASL-M177-19-S

Company Name : Life3 Pte Ltd
Address : 17 Kaki Bukit Place, Singapore 416195
Date Received : 03 May 2019
Date Tested : 03 May – 13 May 2019
Date Reported : 14 May 2019
Sample Description : One (1) sample said to be Quantum Ion Series

Sample was submitted by client on 03 May 2019 in a plastic container marked as:

Quantum Ion Series E304

On analysis, the following results were obtained:

Test Microorganism	Initial Bacterial Load, cfu/mL	Log ₁₀
Salmonella Typhimurium ATCC 14028	6.1 x 10 ⁶	8.79
Staphylococcus aureus ATCC 25923	1.3 x 10 ⁹	9.11
Candida Albicans ATCC 10231	4.1 x 10 ⁶	6.61

Contact Time: 5 minutes, no dilution

Test Microorganism	Count of Surviving Test Microorganism, CFU/ml (Log ₁₀)	Log Reduction	Percentage Kill of Test Microorganism, %
Staphylococcus aureus ATCC 25923	<10 (1.0)	> 8.11	> 99.9999
Salmonella Typhimurium ATCC 14028	<10 (1.0)	> 7.79	> 99.9999
Candida Albicans ATCC 10231	<10 (1.0)	> 5.61	> 99.9999

Quantum Ion
证明在5分钟
内对细菌和霉
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到 99.9999%

共振频率破碎微生物的细胞：测试1



处理前



处理后30秒细胞被震碎

共振频率破碎微生物的细胞：测试2

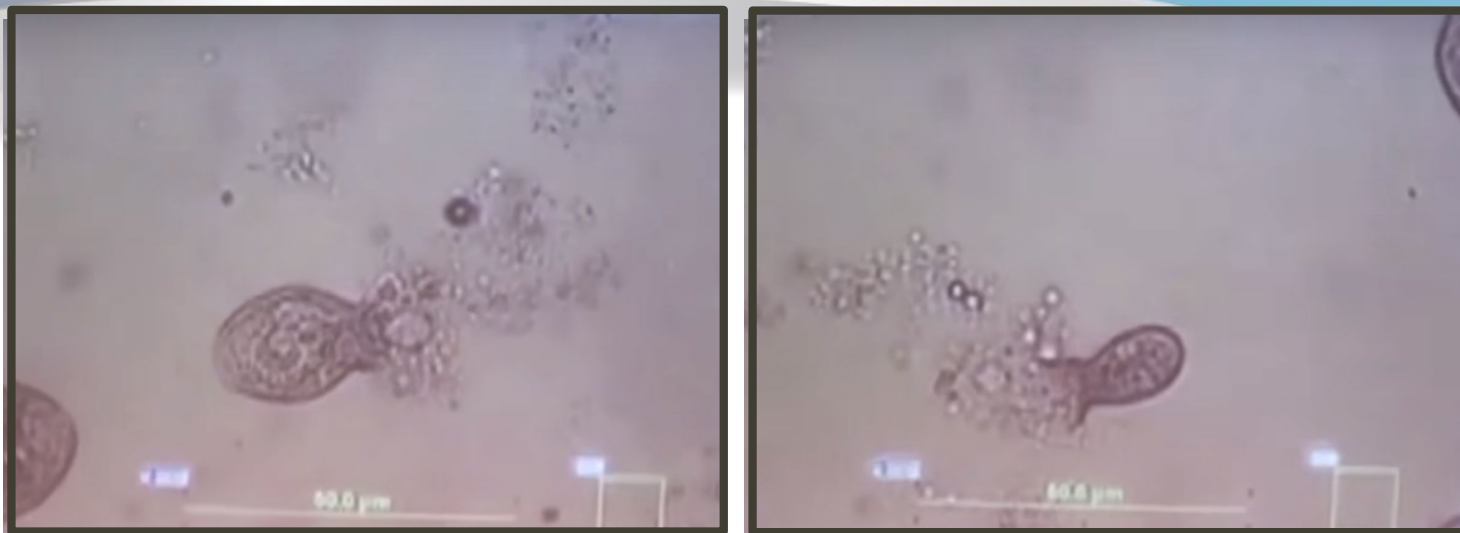


处理前



处理后30秒细胞被震碎

测试 3：应用共振频率30秒后



微生物的细胞被共振频率破碎



量子共振杀菌黑科技应用在口罩上



*加强抗菌能力，延长口罩的使用期



除臭

消毒

杀菌

细菌计数结果(ATP 荧光检测)

RLU(单位)上限≤ 500

物品:		处理前(RLU)	处理后(RLU) (Quantum Ion)
口罩(1)	十五分钟	3,271	190
口罩(2)	一天	8,520	215



*临床测试

Quantum Ion 成功处理新加坡某著名医院卫生间



细菌计数结果(ATP 荧光检测)

RLU(单位)上限≤ 500

地点:		处理前	处理后	测试结果 (RLU)		
23 号病房		(RLU)	(RLU)	3个月	6个月	9个月
厕所1	水龙头	3,497	115	42	37	338
	马桶坐盖	571	11	93	43	178
厕所2	小便池	6,677	14	22	17	22
	洗面盆	7,255	46	244	63	232
	马桶坐圈	822	22	41	45	19
厕所3	隔间扶手	3,024	50	75	39	195
	洗面盆	25,282	95	233	157	31

处理后6个月的测试结果

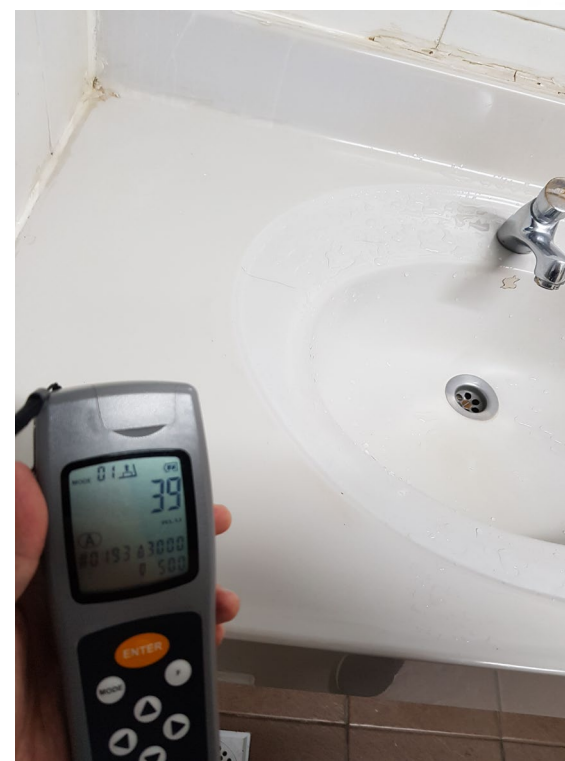
2019年5月16号



厕所1：水龙头



厕所1：马桶坐盖



厕所3：洗面盆



厕所3：隔间扶手



KK Women's and
Children's Hospital
SingHealth

Tel: (65) 6293 4044
Fax: (65) 6293 7933
100 Bukit Timah Road
Singapore 229899
www.kkh.com.sg

22 June 2009

Silverplus Technology (S) Pte Ltd
32 Ang Mo Kio Industrial Park 2
#06-08 SING Industrial Complex
Singapore 569510

Attn: To whom it may concern

NANOSILVER AND TITANIUM DIOXIDE CATALYST SYSTEM (Nano Max)

This is to express our satisfaction on the abovementioned that had been implemented in our new Air Handling Units and Fan Coil Units during our ACMV Phase 2 project.

An Indoor Air Quality audit conducted shown that there is a fall in bacteria and fungi count which is in line with our goal to provide a healthy environment to our patient, visitor and staff.

This system had indeed further enhanced our ACMV system.

Yours Sincerely

KK Women's and Children's Hospital

Anthony Lim
Facilities Manager

Hospital of Choice for Women and Children

Members of the SingHealth Group
Changi General Hospital • KK Women's and Children's Hospital • Singapore General Hospital
National Cancer Centre • National Dental Centre • National Heart Centre • Singapore National Eye Centre
SingHealth Polyclinic



National University Hospital

Date: 20th Aug 2009

Silverplus Technology (S) Pte Ltd
53 Ubi Ave 1, #05-17
Paya Ubi Industrial Park
Singapore 408934

Attn: To whom it may concern

UV-NANOMAX AIR STERILIZATION SYSTEM AND SURFACE TREATMENT

We would like to express our satisfaction on the above mentioned that was installed into our Fan Coil Unit and treated onto the surrounding walls serving the mould-filled Ward 47 Procedure room.

It has decontaminated and significantly improved the indoor air quality to achieve within NEA guidelines. The unpleasant musty odour has reduced tremendously whereby our staffs were able to feel the immediate difference. Air audit performed by an accredited laboratory shows a 90% reduction in both airborne bacteria and fungi counts. This is in line with our objective to provide a healthy and pleasant environment for our patients and staffs.

Therefore, we recommend the abovementioned with confidence especially for medical environment.

Yours Sincerely

National University Hospital of Singapore

Eddy Nai
Facilities Engineer

表扬信件：马来西亚卫生部



BAHAGIAN PERKHIDMATAN KEJURUTERAAN
KEMENTERIAN KESIHATAN MALAYSIA
Aras 2-5, Blok E6,
Parcel E, Precinct 1,
Pusat Pentadbiran Kerajaan Persekutuan,
62590 PUTRAJAYA, MALAYSIA.



Tel : (603) 8883 3888
Fax : (603) 8888 6184/ 8181
http : //www.moh.gov.my/engineering

Ruj Kami : () dlm.KKM 153 PCG 18

Tarikh : 19 Oktober 2009

To Whom it May Concern,

Nanomax® Photo-Catalyst and Nano-Silver Coating System

Reference is made in relation to the above mentioned product.

Further to detailed assessment conducted by our engineers, we found that the test report related to the product is in line with many technical findings on photo-catalyst reaction and technology. The photo-catalyst reaction is potentially benefit in eliminating high degree of micro-organism. The product has been recommended to be used in Hospital Sultan Ismail, Johor Bahru for the control of indoor air pollutants.

Yours sincerely,

(DATUK CHIN GOO CHAI)
Director
Engineering Services Division
Ministry of Health Malaysia

C:\sq3\business\inamox

'Sila catatkan rujukan surat ini apabila menjawab'



BAHAGIAN PERKHIDMATAN KEJURUTERAAN
KEMENTERIAN KESIHATAN MALAYSIA
Aras 2-5, Blok E6,
Parcel E, Precinct 1,
Pusat Pentadbiran Kerajaan Persekutuan,
62590 PUTRAJAYA, MALAYSIA.



CERTIFIED TO MS ISO 9001:2000
Reg. No: AR 1834

Tel : (603) 8883 3888
Fax : (603) 8888 6184/ 8181
http : //www.moh.gov.my/engineering

Ruj Kami : (16) dlm.KKM 153 PCG/PHE (3)

Tarikh : 28 Oktober 2009

CEO
Platinum Maxim Sdn. Bhd.
No. 6-2 Jalan PJU 5/21,
Pusat Perdagangan Kota Damansara
47810 Petaling Jaya

Inspection and Case Study for Indoor Air Quality using Nanomax Coating System

Reference is made in relation to your invitation for the visit on 22 October 2009 and microbial test report dated 24 October 2009.

The result demonstrated that the above coating system is able to reduce the microbial on surface treated with Nanomax coating. It is in line with the objective of good indoor air quality practice to reduce the air-borne hazard. We strongly recommend of continuous monitoring and maintenance to enhance long term indoor air quality for the same built environment.

Thank you.

Yours sincerely,

(KHEW SWEE LIAN)
b/p:
Director
Engineering Services Division
Ministry of Health Malaysia

cc: Pyramid Tower Hotel

Disclaimer: This letter is solely based on the fact at the time it is issued. The department does not have any intention to demonstrate any bias recommendation to any products. Please refer to the expert's advice if you have any doubt to the application of the above product.

C:\admin\sq3\business\inamox work

'Sila catatkan rujukan surat ini apabila menjawab'

TEST REPORT

Your Ref: _____ Date: 22 Jul 2005

Our Ref: **57S053238-B-SLE** Page: 1 of 3

DID: 6885 1345 / 6885 1346 Fax: 6773 2912



NOTE: This report is issued subject to PSB Corporation's "Terms and Conditions Governing Technical Services". The terms and conditions governing the issue of this report are set out as attached within this report.

SUBJECT

Antibacterial Activity of Treated Fabric

CLIENT

Eco-Nano Marketing
93 Yishun Street #1
#01-07
Singapore 768451

Attn: Steve Siaw
Director

SAMPLING SUBMISSION DATE

05 Jul 2005

DESCRIPTION OF SAMPLE

- One piece of NanoMax (Photocatalyst) Treated Fabric. (Size : 30 cm x 30 cm)
- One piece of Untreated Fabric (Size : 30 cm x 30 cm)

METHOD OF TEST

AATCC Test Method 100-1999
'Assessment of Antibacterial Finishes on Textile Materials'

The test microorganism used was :

Klebsiella pneumoniae (ATCC 4352)

As requested, the inoculated samples were exposed under white fluorescent light at a distance of 50 cm for 6 hours and 24 hours at 25°C.



Head Office: PSB Corporation • Testing Group • 1 Science Park Drive Singapore 118221 • Hotline +65 6885 1333 • Fax +65 6775 8725 • Email: testing@psbcorp.com • Website: www.psbcorp.com
Reg. No.: 1980028671 • Regional Offices: Bangkok • Guangzhou • Jakarta • Kuala Lumpur • Qingdao • Shanghai • Tianjin

RESULTS

Product : NanoMax (Photocatalyst) Treated Fabric

Test microorganism / Bacteria cells concentration	Count of test microorganism recovered from the inoculated sample		Percentage Reduction
	Untreated Fabric	NanoMax (Photocatalyst) Treated Fabric	
<i>Klebsiella pneumoniae</i> (ATCC 4352) (3.8×10^5 cfu/ml)			
0 hour	320 000	-	-
6 hours	-	420	99.87
24 hours	-	70	99.98

CHENG-SHAW LAY ENG (MRS)
TECHNICAL EXECUTIVE

KAM-LEONG YIN PHENG (MRS)
MICROBIOLOGIST
MICROBIOLOGY
TESTING GROUP

PSB 测试的结果:
6小时k-Pneumoniae (肺炎克雷伯菌)
降低率>99.87% & 24 hrs->99.98%

Symptoms of Pneumonia

Fever, cough	chills	chest pain
hemoptysis	dyspnea	tachypnea
tachycardia	rales	lung consolidation
cyanosis	mucoid sputum	current jelly sputum

TEST REPORT

Your Ref: Date: 22 Jul 2005

Our Ref: 57S053238-D-SLE Page: 1 of 3

DID: 6885 1345 / 6885 1346 Fax: 6773 2912



57S053238-D-SLE

PSB Corporation

NOTE: This report is issued subject to PSB Corporation's "Terms and Conditions Governing Technical Services". The terms and conditions governing the issue of this report are set out as attached within this report.

SUBJECT

Antibacterial Activity of Treated Fabric

CLIENT

Eco-Nano Marketing
93 Yishun Street 81
#01-07
Singapore 768451

Attn: Steve Siaw
Director

SAMPLING SUBMISSION DATE

05 Jul 2005

DESCRIPTION OF SAMPLE

- One piece of NanoMax (Photocatalyst) Treated Fabric. (Size : 30 cm x 30 cm)
- One piece of Untreated Fabric (Size : 30 cm x 30 cm)

METHOD OF TEST

AATCC Test Method 100-1999
'Assessment of Antibacterial Finishes on Textile Materials'

The test microorganism used was :

Escherichia coli (ATCC 8739)

As requested, the inoculated samples were exposed under white fluorescent light at a distance of 50 cm for 6 hours and 24 hours at 25°C.

RESULTS

Product : NanoMax (Photocatalyst) Treated Fabric

Test microorganism / Bacteria cells concentration	Count of test microorganism recovered from the inoculated sample		Percentage Reduction
	Untreated Fabric	NanoMax (Photocatalyst) Treated Fabric	
<i>Escherichia coli</i> (ATCC 8739) (2.5×10^5 cfu/ml)			
0 hour	320 000	-	-
6 hours	-	1 000	99.68
24 hours	-	100	99.97

CHENG-SHAW LAY ENG (MRS)
TECHNICAL EXECUTIVE

KAM-LEONG YIN PHENG (MRS)
MICROBIOLOGIST
MICROBIOLOGY
TESTING GROUP

PSB 测试的结果：
6 小时E-Coli (大肠杆菌)
降低率-> 99.68% & 24hrs-> 99.97%



試験証明書

2002年1月24日

ご提出の試料に対する試験結果は下記の通りです。

受付月日 2001年11月30日

品名・品番 ウェルコート100 塗布プレート、ブランクプレート

数量 2

〒540-0805 大阪市中央区上町1丁目15番15号

財団法人 日本紡績検査協会

近畿事業所

TEL 大阪 (06)4762-1111 (代表)

FAX 大阪 (06)4762-1111 (代表)

【試験項目】

かび抵抗性試験

【試験方法】

JIS Z 2911 プラスチック製品の試験 方法 A

無機塩素天培地上に試料を貼付し、湿潤剤添加無機塩溶液の入った
下記5菌株の混合孢子懸濁液を噴霧した。29±1℃、90% RH
以上で4週間培養し、試料上のかびの生育を観察した。

【試験菌株】

Aspergillus niger ATCC 6275*Penicillium funiculosum* ATCC 9644*Paecilomyces variotii* ATCC 10121*Glocladium virens* ATCC 9645*Chaetomium globosum* ATCC 6205

【試験結果】

試 料	かびの生育			かび抵抗性 表示
	7日	21日	28日	
ウェルコート100 塗布プレート	—	—	—	0
ブランクプレート	—	—	±	1

(注) ラベルの反対面にUV照射2時間後、試験を行った。

- *表中 (—) かびの生育を認めない
(±) わずかに生育を認めた
(+)~(H) 順次かびの生育が著しい
- *表示 (0) 肉眼及び顕微鏡下でかびの生育は認められない
(1) かびの生育は肉眼では認められないが、
顕微鏡下では認められる
(2) かびの生育は試料面積の25%以内
(3) かびの生育は試料面積の25%以上

試験番号 011454

本試験結果はご提出の試料に対するものであって、商標を代表するものではありません。

試験証明書

2001年12月27日

ご提出の試料に対する試験結果は下記の通りです。

受付月日 2001年11月30日

品名・品番 プレートブランク、ウェルコート100

数量 3

〒540-0805 大阪市中央区上町1丁目15番15号

財団法人 日本紡績検査協会

近畿事業所

TEL 大阪 (06)4762-1111 (代表)

FAX 大阪 (06)4762-1111 (代表)

【試験項目】

抗菌性試験

【試験菌株】

M R S A *Staphylococcus aureus* IID 1677

【試験方法】

JIS Z 2801 (フィルム密着法) に準ずる。

【試験結果】

植 菌 数 [A]	1.2×10^3
プレートブランク [B]	1.6×10^3

試 料	菌 数	滅 菌 率 (%)
ウェルコート100 B-6	2.6×10^3	83.8
ウェルコート100 D-6	10 CFU	99.9 ±

(注.) ラベルの反対面にUV照射を行いながら2時間培養した。

(注.) 滅菌率の算出は、ブランクをもとに行った。

对耐甲氧西林金黄色葡萄球菌（MRSA）的
杀伤力达99.9%以上。

試験番号 011454-(1)

本試験結果はご提出の試料に対するものであって、商標を代表するものではありません。

報告 No.O-49-070

Aug./29'05

大和化学工業株式会社

研究開発統括部 (大阪)



抗菌性能試験結果

【試 料】 貴社提供加工品 計 3 点

青色フィルター：使い捨てタイプ (ポリエチレン製)

白色フィルター：ウォッシュアップタイプ (ポリエステル製)

加工条件

・ A 液 (耐洗擦性・消臭・抗菌重視)

・ B 液 (価格重視・抗菌のみ)

白色 A：A 液を裏面、表面より計 400 g/m² (wet) スプレー青色 A：A 液を裏面、表面より計 200 g/m² (wet) スプレー青色 B：B 液を裏面、表面より計 200 g/m² (wet) スプレー

洗濯方法：JIS L-0217 103 法に準じて 3 回行いました。(JAFET 標準洗剤使用)

【方 法】 抗菌性試験法

内 容：JIS L-1902:2002 繊維製品の定量試験方法に基づきます。
 全ての試料において、菌液接種時に活性剤 Tween80 を使用
 しています。

供試細菌：Staphylococcus aureus NBRC 12732 (黄色ブドウ球菌)

判 定：静菌活性値が 2.2 以上で抗菌効果が有ります (JAFET 基準)。
 この試験は、増殖値が 1.5 以上で成立します。

【結 果】

		菌数		菌数平均値	増殖値	
		N ₁	N ₂			
標準布 0 時間		8.6×10 ⁴	1.2×10 ⁵	1.0×10 ⁵	2.2	
標準布 18 時間		1.3×10 ⁷	1.9×10 ⁷	1.6×10 ⁷	(試験成立)	
試料	洗濯	N ₁	N ₂	菌数平均値	静菌活性値	判定
白色 A	0 回	<20	<20	<20	5.8	有
	3 回	<20	<20	<20	5.8	有
青色 A	0 回	<20	<20	<20	5.8	有
青色 B	0 回	<20	<20	<20	5.8	有

【考 察】 上記試験結果より、貴社提供品に抗菌効果が認められました。

以 上

研究案例 5

TEST REPORT

Your Ref: Date: 11 Oct 2006

Our Ref: 575065343-01-SLE Page: 1 of 3

DID: 6885 1345 / 6885 1346 Fax: 6773 2912

NOTE: This report is issued subject to PSB Corporation's "Terms and Conditions Governing Technical Services".
The terms and conditions governing the issue of this report are set out as attached within this report.

SUBJECT

Antimicrobial Activity of Coating

CLIENT

Eco-Nano Marketing
Blk 3007 Ubi Road 1
#02-436
Singapore 408701

Attn: Mr Steve Siaw

SAMPLE SUBMISSION DATE

28 Sep 2006

DESCRIPTION OF SAMPLE

1. 12 pieces of untreated stainless steel plates (Size : 50 mm x 50 mm).
2. 12 pieces of stainless steel plates treated with NanoMax™ – Nano Silver Coating (Size : 50 mm x 50 mm).

METHOD OF TEST

JIS Z 2801 : 2000
"Antimicrobial products – Test for antimicrobial activity and efficacy".

The test microorganism

Staphylococcus aureus (ATCC 6538)



PSB
Corporation



PSB Corporation • Trading Group • 1 Science Park Drive Singapore 118221 • Support Line: +65 6885 1333 • Fax: +65 6773 8070 • Email: trading@psbcorp.com • Website: www.psbcorp.com
Company Registration No.: 198522817R • PSB Corporation is wholly owned by TUV SUD AG.

575065343-01-SLE



RESULTS

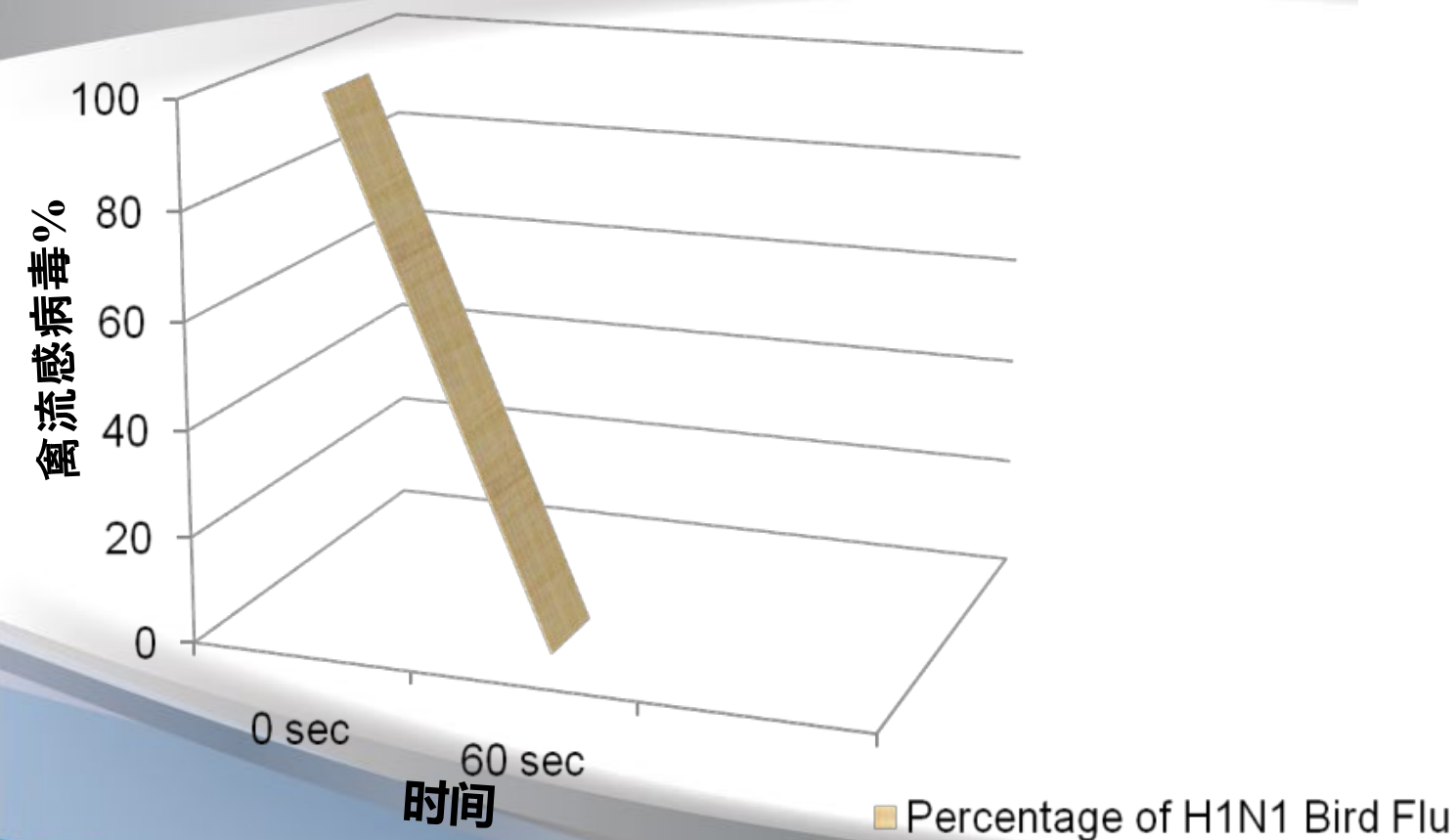
Product : NanoMax™ – Nano Silver Coating

Test microorganism (Bacterial cells per test piece)	Average of the number of viable cells of test microorganism per test piece		Value of Antimicrobial Activity (Criteria : Not less than 2.0)	Percentage Reduction
	0 hour	24 hours		
Staphylococcus aureus (ATCC 6538) (1.1 x 10 ⁶ cells)				
Untreated stainless plate	76 000	4 200 000	-	-
Stainless steel plate coated with NanoMax™ – Nano Silver Coating	-	37	5.0	99.95

CHENG-SHAW LAY ENG (MRS)
TECHNICAL EXECUTIVE

KAM-LEONG YIN PHENG (MRS)
MICROBIOLOGIST
MICROBIOLOGY
TESTING GROUP

研究案例6：禽流感病毒（H1N1）



Kyoto Prefectural University of Medicine

京都府立医科大学

平成17年2月8日

京都府立医科大学・医学研究科

感染免疫病態制御学

職 名 教授

氏 名

今西二郎

「光触媒コート剤（ウェルコート）のインフルエンザウイルス増殖抑制効果」

- 受託研究報告書 -

- ・市販、汎用タイプ、高抗菌タイプのウェルコートをコーティングすることによりヒトインフルエンザウイルスの増殖は特異的に抑制された。
- ・抑制効果はUV照射により増強された。
- ・市販、汎用タイプで最も高いウイルス増殖抑制効果が認められた。この増殖抑制効果は液状のウェルコートをウイルスと反応させても見られないことから、コーティングしたウェルコートより産生されるヒドロキシルラジカル等がウイルスの増殖性を阻害していることが示唆された。
- ・マルチパワー混合品では溶液中に強い抗ウイルス物質が含まれることが明らかとなった。即ち、ウェルコートの酸化チタン（光触媒）より発生するヒドロキシルラジカル以外の抗ウイルス効果が含まれることが示唆された。
- ・UV未処理の試験においても汎用タイプではUV処理区とほぼ同程度の増殖抑制効果を認めたことから、ウェルコートによる抗ウイルス効果は通常の室内照明下でも有効であることが示唆された。

表 ウェルコートによるウイルス増殖抑制効果

	UV未照射	UV照射(1分)	UV照射(1分)
ウェルコート		ウイルス添加前にUV照射	ウイルス添加後にUV照射
市販タイプ	5.6%	3.5%	1%
汎用タイプ	2.5%	1%	1%
高抗菌タイプ	11.1%		
マルチパワー	1%未満※		

数字はウェルコート未処理区におけるウイルス増殖を100としたときの相対値（%）を表す。

※ただしマルチパワー溶液をウイルスと混合しても同様の増殖抑制効果が見られる。

京都府立医科大学 (Kyoto Prefectural University of Medicine) 测试结果：
禽流感病毒(H1N1)在一分钟内减少 > 99 %

酒店/服务公寓

香格里拉酒店-新加坡,香港,广州
威斯丁酒店 -马来西亚
澳门葡京酒店
文华东方酒店 – 新加坡
金沙酒店 –新加坡
康莱德酒店- 新加坡
四季酒店 – 新加坡
泛太平洋酒店 – 新加坡
皮克林宾乐雅酒店- 新加坡
喜来登酒店 – 澳门,新加坡
贵都酒店- 新加坡
兰卡威柏嘉雅度假村-马来西亚
吉隆坡金字塔塔酒店-马来西亚
云顶第一世界大酒店-马来西亚

医院

新山苏丹依斯迈医院 -马来西亚
Ampang Puteri Specialist Hospital -马来西亚
康明国际医院- 泰国
新加坡国立大学医院- 新加坡
竹脚妇幼医院- 新加坡
陈竹昇医院- 新加坡

其他

特許半導體 厂 – 新加坡
新加坡知新馆- 新加坡
能多洁- 新加坡
来福士广场- 新加坡
新达城- 新加坡
南洋艺术学院- 新加坡
海事博物馆- 新加坡
九龙城法院大楼- 香港
长江大厦 – 香港
马来西亚国立大学
士乃国际机场 -马来西亚
吉隆坡国际机场 -马来西亚
马来西亚理工大学



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