

Nachgewiesene Wirksamkeit gegen **VIREN** inklusive **SARS COV-2** (Testreporte des KR Biotech Labors nach ISO 21702)

KR Biotech Co., Ltd.
 Institute of Infectious Disease Control
 (BGL No. KCDC-09-3-01)
 Neungdong-ro 150, Konkuk University
 Bldg12, Rm 416, Kwangju-gu, Seoul

Test Report

Personnel	Kwon, choongsung	Tel. No.	
Client	Affiliation	K-Viro Inc.	E-mail
	Address	SB408, 25 Misagangbyeonseo-ro, Hanam-si, Gyeonggi-do, Republic of Korea	
Request	Virucidal Activity Test (ISO 22196/ISO21702)		
Sample	K-viro Film		
Purpose of Use on the Product	Anti-virus film		
Virus Testing	COVID-19 (SARS-CoV-2)	Cell Line	Vero-E6
Test No.	KR-2007-07-CIC	Test Period	2020.05.25-07.17
Sample State	KH nano biomaterial coated film, semi-transparent		
Reaction Time	1, 10 & 30 min.	Titration	CPE
Test Temperature	Room Temperature (Approx. 20°C) Tester Cho Han-saem <i>✓</i>		

COVID-19 (SARS-CoV-2)	Virus Titer		Treatment Time	Virus titer TCID ₅₀ (log)	Virus Reduction Rate	
	TCID ₅₀	TCID ₅₀ (log)			(log)	
					(log)	(%)
K-Viro film	3.16X10 ⁶	6.50	1 min	4.40	2.0	>99.00%
			10 min	≤2.50	≥4.0	>99.99%
			30 min	≤2.50	≥4.0	>99.99%

Result: Evaluation of the virucidal activity of the K-Viro film was performed against the COVID-19 (SARS-CoV-2). K-Viro film showed 99% of the COVID-19 virus was inactivated within 1 minute and more than 99.99% of the COVID-19 virus were killed 10 minutes after treatment.

July 17, 2020

Test Manager: Kim Young Bong

KR Biotech Co., Ltd.

* This test report is a result limited to the sample and sample name provided by the client and does not guarantee the quality of the overall product.
* This report cannot be used for PR, advertising, and litigation purposes, and the use of this report other for its original purpose is prohibited.

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주식회사케이알바이오텍
 질병관리연구원 (BGL) 제KCDC-09-3-01호
 서울 중랑구 농성로 150 건국대학교
 동문생물공학관 416호

시험성적서

담당자	권중성	전화	031-866-5116
연락처	소속 [주]케이알바이오텍 (K-Viro) 이메일 kvirofilm@gmail.com		
	주소	경기도 안남시 미사강변서로 25, SB408	
연락내용	항균활성 바이러스 살균 실험 (ISO 22196/ISO21702)		
시험	Kviro-Film (케이알바이오텍 코비디필름)		
시험시용용도	살균, 방역		
시험바이러스	COVID-19 (SARS-CoV-2)	Influenza (H1N1/A/PR8)	Coxsackie virus B1
	Herpes simplex virus		
시험번호	KR-2007-07-CIC	시험기간	2020.05.25-07.07
재질상태	KH 나노 코팅 필름	관찰경 현미 KH 나노소재	
반응시간 (온도)	30 분 (25°C)	역가측정	CPE
	24 시간 (37°C)	시험자	조한샘 <i>✓</i>

시험결과

바이러스	바이러스 TCID ₅₀	바이러스 TCID ₅₀ (log)	처리시간	처리 후 바이러스 TCID ₅₀ (log)	바이러스 감소율 (log)	바이러스 감소율 (%)
COVID-19 (SARS-CoV-2)	3.16X10 ⁶	6.50	30분	<2.50	>4.0	>99.99%
			24시간	<2.50	>4.0	>99.99%
			30분	<2.50	>4.0	>99.99%
Influenza (H1N1/PR8)	3.16X10 ⁶	6.50	30분	<2.50	>4.0	>99.99%
			24시간	<2.50	>4.0	>99.99%
			30분	<2.50	>4.0	>99.99%
Coxsackievirus	2.00X10 ⁶	6.30	30분	<2.50	>5.8	>99.99%
			24시간	<2.50	>5.8	>99.99%
			30분	<2.50	>5.8	>99.99%
Herpes simplex virus	7.94X10 ⁵	5.90	30분	<2.50	>3.4	>99.90%
			24시간	<2.50	>3.4	>99.90%
			30분	<2.50	>3.4	>99.90%

결과: [주]K-VIRO 코비디필름은 신종 코로나 COVID-19 (SARS-CoV-2), 독감 인플루엔자, 헤르페스 바이러스, 수족구 바이러스, 헤르페스 바이러스에 대한 살균력 시험결과 필름에 각 바이러스를 처리 후, 30분 처리에 모든 바이러스에 대해 99.99% 이상 시험 효과를 보였습니다.

2020년 07월 7일

시험책임자: 김영봉

주식회사 케이알바이오텍

Nachgewiesene Wirksamkeit gegen **BAKTERIEN** inklusive **MRSA** (Testreporte des KATR nach ISO 22196)

Korea Analysis Test Researcher (KATR)
 Tongli-ro 140, A-336 (Samsong Techno Valley, Goyang City, Gyeonggi-do)
 Tel: 1670-9936 | Fax: 02-6016-9711 | Email: katr@katr.kr

Test report

Request No. : KATRM200907-003	Request date : 2020.09.07
Report No. : KAAAM200911-013	Issue date : 2020.09.11
Company : K-VIRO Co.,Ltd	Purpose of use : Quality control
Address : F215, 16, Misagangbyeonseo-ro, Hanam-si, Gyeonggi-do, Republic of Korea	
Person : KWON CHOONGSUNG	
Submit company :	
Name of sample : k-viro antiviral film	

Test item	Test result	Sample	
		Control	Sample
JIS Z 2801:2010			
Staphylococcus aureus ATCC 6538	Number of bacteria after 30 min	1.5 X 10 ⁵	1.4 X 10 ³
	Antibacterial activity		99.1
Inoculated bacteria	1.5 X 10 ⁵ CFU/mL		
Escherichia coli ATCC 8739	Number of bacteria after 30 min	6.8 X 10 ⁵	<10
	Antibacterial activity		99.9
Inoculated bacteria	6.8 X 10 ⁵ CFU/mL		
Klebsiella pneumoniae ATCC 4352	Number of bacteria after 30 min	2.3 X 10 ⁵	<10
	Antibacterial activity		99.9
Inoculated bacteria	2.3 X 10 ⁵ CFU/mL		

Remark: 1. This report is the result of test conducted by company's samples only. It does not guarantee the quality of all products.
2. This report cannot be used for advertisement, campaign, and legal purpose without KATR's permission. Do not use for any other purposes.

Korea Analysis Test Researcher (KATR)
 Tongli-ro 140, A-336 (Samsong Techno Valley, Goyang City, Gyeonggi-do)
 Tel: 1670-9936 | Fax: 02-6016-9711 | Email: katr@katr.kr

Test report

Request No. : KATRM200907-004	Request date : 2020.09.07
Report No. : KAAAM200918-011	Issue date : 2020.09.18
Company : K-VIRO Co.,Ltd	Purpose of use : Quality control
Address : F215, 16, Misagangbyeonseo-ro, Hanam-si, Gyeonggi-do, Republic of Korea	
Person : KWON CHOONGSUNG	
Submit company :	
Name of sample : k-viro antiviral film	

Test item	Test result	Sample	
		Control	Sample
JIS Z 2801:2010			
Staphylococcus aureus MRSA NCCP 14752 (MRSA)	Number of bacteria after 24 h	1.1 X 10 ⁵	<10
	Antibacterial activity		99.9
Inoculated bacteria	1.1 X 10 ⁵ CFU/mL		

* Sample size = 50 X 50 mm
* Standard film type = sterilized PP film, size = 50 X 50 mm
* Volume of inoculum: 0.4 mL
* Bacterial reduction rate(%)= [(average CFU of control after 18 hrs)-(average CFU of sample after 18 hrs)/(average CFU of control after 18 hrs)]

Korea Analysis Test Researcher