



**KR BIOTECH Co., Ltd.**

**Virus Inactivation Test Record**

**KR BIOTECH Co., Ltd.**

# 1. Test Facility Overview

## 1.1. Testing institution

**KR BIOTECH Co., Ltd.**, Institute of Infectious Disease Control

Rm 406, Konkuk university Bld#12, 120, Neungdong-ro, Kwangjin-gu, Seoul,

Korea (05029)

National Accredited Safety Management Excellence Laboratory (Certification No.

2017-02), Ministry of Science and ICT

## 1.2. Inspection Field:

Medicine made from animal-derived raw materials / Medical device virus

inactivation test

ISO13485:2016 Certification, Virus clearance test

## 1.3. Major Facility:

Biosafety level 2 facility: Building of Animal Life Sciences 406 (LML09-180)

Building of Animal Life Sciences 422-1 (LML14-409)

Biosafety level 3 facility: Institute of Biomedical Science & Technology

(KCDC 10-3-06)

#### 1.4. Equipment used for Inspection: Research Equipment Possession Status

No	Device name	Company	Product code	Introduction Year/Month	Installation location
1	Biological Safety Cabinet(BSC)	Thermo Scientific	1300 series A2	2018.10	703
2	Biological Safety Cabinet(BSC)	JSR	JSCB-15000SB	2018.10	703
3	Water Bath	Daihan Scientific	WB-11	2018.11	703
4	Deep Freezer	Thermo Scientific	TSE400GPD	2018.10	703
5	Deep Freezer	Ilshin	DF8524	2020.02	422-1
6	CO2 Incubator	Thermo Scientific	BB15	2018.10	703
7	CO2 Incubator	ASTEC	SCI-165D	2007.12	406
8	Oven	Daemyung	1500°C DMBF15/200	2011.10	703
9	Autoclave	SciLab Korea	SACS-1045	2015.07	406
10	Autoclave	JSR	JSAC-100T	2006.02	703
11	Balance	OHAUS	AVG812	2010.01	406
12	Autoclave	BioFree	BF-100Ac	2010.01	422-1
13	Clean Bench	Vision Scientific	VS-1400LSN3	2008.03	406
14	Clean Bench	N-Biotek	NB-602WSL	2010.01	422-1
15	Microscope	OLYMPUS	CKX41SF	2007.12	406
16	Microscope	OPTINITY	KI-450	2018.10	703
17	Refrigerator	Samsung	SR-3732	2003.03	406
18	Refrigerator	Samsung	RT62K7045SL	2018.10	703
19	Centrifuge	Hanil	MF550	2003.03	406
20	Ultrapure water vaporizer	MILLIPORE	Milli-Q Synthesis	2006.11	406
21	pH meter	Fisher science Education	pH/ION 510	2016.09	406

22	Hot plate & Magnetic stirrer	Vision Scientific	KMC-120SH	2003.03	406
23	Dry Oven	Vision Scientific	VS-1202D2n	2004.11	406
24	Microplate Reader	Biotek Instruments. Inc	Epoch	2013.03	406
25	Micro Centrifuge	Hanil	Micro 17R	2010.01	406
26	Isolater	Orient	MSRS	2016.01	422-1
27	Isolater	Jeungdo BnP	Clean rack	2010.01	422-1
28	BOD Incubator	Vision Scientific	VS-1203P1	2010.01	422-1
29	BOD Incubator	Vision Scientific	VS-1203P1	2010.09	422-1

## **2. Major Facility**

### **2.1. Calibration Record: High Pressure Steam Sterilizer in BL3 Facility**

- 1) Biological Safety Cabinet Product Warranty (BSC-Thermo, BSC-test report)
- 2) Biological Safety Cabinet Product Warranty (BSC-JSR)
- 3) Water Bath (water bath)
- 4) Deep Freezer (Deep freezer)
- 5) Report of Verification of Biosafety level 3 Facility on the 5th floor of Konkuk University Institute of Biomedical Science & Technology (BL3 Verification)
- 6) BL3 differential pressure comparison data (BL3 differential pressure comparison verification)

### 3. Composition of Researcher

#### 3.1. General Manager: Young Bong Kim, CEO of KR BIOTECH Co., Ltd.

**Director of Institute of Infectious Disease Control in Konkuk  
University**

#### 3.2. Composition of Researchers:

Name	Position	Major	Final Education (Degree), Virus Research Career
Ye Jo Han	Director	Virology	Sogana University College of Life Sciences (Ph.D.), Virology for 20 years
Han Sam Cho	Senior Researcher	Virology	Konkuk University College of Animal Life Sciences (Ph.D.), Virology for 8 years
Soon Sun Kim	Assistant Researcher	Virology	Sungkyunkwan University College of Natural Sciences (B.S.), Virology for 5 years
Min Ji Kim	Senior Researcher	Pharmacy	Seoul National University College of Pharmacy (Ph.D.), Virology for 1 year
Hee Jung Lee	Professor / Director	Virology	Konkuk University College of Animal Life Sciences (Ph.D.), Virology for 14 years
Ki Hoon Park	Research	Virology	University of Animal Life Sciences (Ph.D. completion), Virology for 8 years
Yu Yeon Jang	Research	Virology	Konkuk University College of Animal Life Sciences (Ph.D. completion), Virology for 7 years
Ha Nul Choi	Research	Virology	Konkuk University College of Animal Life Sciences (Ph.D. completion), Virology for 7 years
Jung Min Chun	Research	Virology	Konkuk University College of Animal Life Sciences (M.S.), Virology for 2 years

## CEO Summary

(Eng.)	Young Bong Kim	Name(Kor.)	김영봉
Affiliation	KR BIOTECH / Konkuk University		
Position	CEO / Professor	Email	kimera@konkuk.ac.kr
Address	Rm 406, Konkuk university Bld#12, 120, Neungdong-ro, Kwangjin-gu, Seoul, Korea (05029)		

Education			
Attendance Period	School	Major	Degree
1983.03-1987.02	Sogang University	Life Science	B.S.
1990.03-1992.02	Sungkyunkwan University	Genetic Engineering	M.S.
1993.03-1999.02	Sogang University	Virology	Ph.D.

  

Career		
Employment period	Place	Position
1991-1994	National Institutes of Health / AIDS department	Researcher
1994-1998	Chong Kun Dang Pharmaceutical Research Institute	Assistant Researcher
1998-2001	National Institutes of Health	Visiting Fellow
2001-2002	Case Western Reserve Univ Medical College	Research Associate
2002-2003	Sungkyunkwan University	Research Professor
2003-2006	Konkuk University / Department of Animal Biotechnology	Department Head
2012-2014	The Microbiological Society of Korea	Chairman of Future Development Committee

2008-2013	Ministry of Agriculture and Forestry / Chicken Export Research Group	Secretary General
2009-Present	KR BIOTECH. Co., Ltd.	CEO
2011-Present	Konkuk University / Institute of Infectious Disease Control	Director
2013-2015	Konkuk University / Department of Bio-industrial technologies	Department Head
2017-Present	Konkuk University / Department of Biomedical Science and Engineering	Professor
2013-2015	Ministry of Food and Drug Safety	External Expert
2019-Present	The Korean Society of Virology	Vice President / President-elect
2013-2015	Korea Technology Finance Corporation	External Evaluation Committee
2014-2014	Ministry for Food, Agriculture, Forestry and Fisheries	Level Assessment Committee Member for Core Strategic Technology
2014-Present	The Korean Society for AIDS	Director / Auditor Director
2017-2019	Evaluation of Government Affairs by the Prime Minister's Affiliate	Evaluation Committee
2017-Present	Incheon Airport National Quarantine Station Biosafety Committee	Vice President
2017-2019	Center for Disease Control	Influenza Expert Advisor
2018-Present	Konkuk University Biosafety Committee	Chairman

<b>Responsibilities</b>	
<b>Business period</b>	<b>Responsibilities</b>



2007.09-Present	Animal-derived medicine / Supervision of testing the virus inactivation of medical devices
2012.01-2014.11	Development of a gene-based vaccine for avian influenza that induces wide neutralization antibody
2012.12-2014.12	Improving the effectiveness of FMDV vaccine and development of novel molecular adjuvant
2014.06-2017.11	Development of antiviral effect disinfectant using natural product
2016.07-Present	ZIKA virus vaccine development
2015.12-Present	MERS-CoV vaccine development

<b>Publication</b>			
<b>Date</b>	<b>Title</b>	<b>Name of Journal</b>	<b>Role</b>
2020	A network-based pharmacology study of active compounds and targets of <i>Fritillaria thunbergii</i> against influenza	Computational Biology and chemistry	Corresponding Author
2020	Tannic acid-functionalized boron nitride nanosheets for theranostics	Journal of Controlled Release	Co-author
2020	Identifying active compounds and targets of <i>Fritillariae thunbergii</i> against Influenza-associated inflammation by network pharmacology analysis and molecular docking	Molecules	Corresponding Author
2018	Antiviral activity of <i>Poncirus trifoliata</i> seed extract against oseltamivirresistant influenza virus	Journal of Microbiology	Corresponding Author
2018	Identification of peptide based B-cell epitopes in Zika virus NS1	Biochemical and Biophysical Research Communications	Corresponding Author
2018	Porcine endogenous retrovirus envelope coated baculoviral DNA vaccine against porcine reproductive and respiratory syndrome virus	ANIMAL BIOTECHNOLOGY	Corresponding Author
2017	Advances in epidemiology, biology and laboratory diagnosis of Zika virus	Journal of Bacteriology and Virology	Corresponding Author
2017	Fusion of flagellin 2 with bivalent white spot syndrome virus vaccine increases survival in	JOURNAL OF INVERTEBRATE	Corresponding Author

	freshwater shrimp	PATHOLOGY	
2017	Light-switchable systems for remotely controlled drug delivery	Journal of Controlled Release	Co-author
2017	Progress of Middle East respiratory syndrome coronavirus vaccines: a patent review	EXPERT OPINION ON THERAPEUTIC PATENTS	Corresponding Author
2016	Immunogenicity of Virus Like Particle Forming Baculoviral DNA Vaccine against Pandemic Influenza H1N1	PLoS One	Corresponding Author
2016	simple mouse model for study of human immunodeficiency virus.	AIDS Res Hum retroviruses	Corresponding Author
2016	Transmission of Porcine Endogenous Retrovirus Produced from Different Recipient Cells In Vivo	PLOS ONE	Corresponding Author
2015	Antiviral Effect of Methylated Flavonol Isorhamnetin against Influenza	PLoS One	Co-author
2015	Comparison of Repellency Effect of Mosquito Repellents for DEET, Citronella, and Fennel Oil	Journal of Parasitology Research	Corresponding Author
2015	Distribution of Porcine Endogenous Retrovirus in Different Organs of the Hybrid of a Landrace and a Jeju Domestic Pig in Korea	Transplantation Proceedings	Corresponding Author
2015	Effect of AcHERV-GmCSF as an Influenza Virus Vaccine Adjuvant	PLoS One	Corresponding Author
2015	Enhanced Anti-inflammatory Effects of $\gamma$ -irradiated Pig Placenta Extracts	Korean Journal for Food Science of Animal Resources	Corresponding Author
2015	Functionalization of nano-graphenes by chimeric peptide engineering	RSC Advances	Corresponding Author
2015	Identification of Porcine Endogenous Retrovirus (PERV) packaging sequence and development of PERV packaging viral vector system	Journal of Microbiology	Corresponding Author
2015	Image-guided synergistic photothermal therapy using photoresponsive imaging agent-loaded graphene-based nanosheets	Journal of Controlled Release	Co-author

2015	Sublingual Immunization of Trivalent Human Papillomavirus DNA Vaccine in Baculovirus Nanovector for Protection against Vaginal Challenge	PLoS One.	Corresponding Author
2015	Therapeutic potential of an AcherV-HPV L1 DNA vaccine	Journal of Microbiology	Corresponding Author
2014	Development and Evaluation of a Semifield Test for Repellent Efficacy Testing	Journal of Medical Entomology	Corresponding Author
2014	Alpha-fetoprotein, identified as a novel marker for the antioxidant effect of placental extract, exhibits synergistic antioxidant activity in the presence of estradiol	PLoS One.	Co-author
2014	Antiviral Activity of 3,4'-Dihydroxyflavone on Influenza A Virus	Journal of Microbiology	Co-author
2014	Comparison of JEV Neutralization Assay Using Pseudotyped JEV with the Conventional Plaque-Reduction Neutralization Test	Journal of Microbiology	Corresponding Author
2014	Double stranded aptamer-anchored reduced graphene oxide as target-specific nano detector	Biomaterials	Co-author
2014	Immunogenicity of a Trivalent Human Papillomavirus L1 DNA-Encapsidated, Non-Replicable Baculovirus Nanovaccine	PLoS One	Corresponding Author
2014	Short communication: Antiviral activity of subcritical water extract of Brassica juncea against influenza virus A/H1N1 in nonfat milk	Journal of Dairy Science.	Co-author
2013	Analysis of the Complete Nucleotide Sequence of a White Spot Syndrome Virus Isolated from Pacific White Shrimp	Journal of Microbiology	Corresponding Author
2013	Protective Efficacy of a Human Endogenous Retrovirus Envelope-Coated, Nonreplicable, Baculovirus-Based Hemagglutinin Vaccine against Pandemic Influenza H1N1 2009	PLoS One	Corresponding Author