



# ■ Research progress on new diagnostic reagents for important animal diseases in China

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# The introduction of Beijing Yisen Biotechnology Co., Ltd.China



**BioXLHY**

The company's business scope integrates research and development, production, sales and technical services, and serves customers in the whole industry chain. Engaged in animal disease laboratory diagnostic testing products, food safety monitoring products, animal immunization assessment testing products, etc.. The products are used by hundreds of breeding groups and national animal epidemic prevention departments throughout China. Every year, we provide health protection for nearly one million economic animals.

The company has two wholly-owned subsidiaries, Beijing Zhongjinda Testing Technology Co., Ltd. which is engaged in third-party testing of animal disease and Beijing Xianglong Huanyu Biotechnology Co.

The company has independent foreign trade management right

The company has passed ISO: 9001 quality certification

The company has passed GMP production certification

The company has obtained a veterinary drug production license from the the Ministry of Agriculture and Rural Affairs of China

# Research progress on new diagnostic reagents for important animal diseases

- The impact of the major animal disease on global disasters✓
- Research progress on new diagnostic reagents for important animal diseases

# ASF outbreaks in China : A devastating disease of pigs

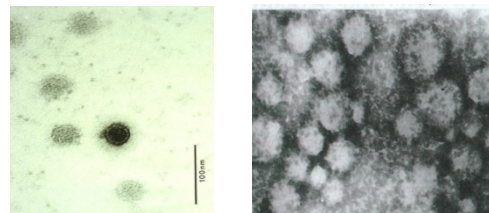
The ASF(Wolf ) has come, eventually In August 2018, ASF emerged in China for the first time; Subsequently rapidly spread across many regions; Posing a major threat to our pig industry. One million pigs were killed, burned, buried, due to outbreaks of ASF in China. There are currently no effective commercial vaccines available globally, relying mainly on surveillance, strict biosecurity measures and decontamination





# What is Classical Swine Fever ?

- **( Hog Cholera, European Classical Swine Fever, before 1990)**
- Classical Swine Fever(CSF) caused by Classical Swine Fever Virus(CSFV) is a highly contagious and hemorrhagic disease with high morbidity and mortality of pigs.
- One of the most important viral infectious diseases of pigs
- Causes great economic damage to the pig industry
- Listed by the WOA, Terrestrial Animal Health Code, 2018, (Chapter 15.2)
- Must be reported
- Strict control measures worldwide  
(eradication/ preventive culling/ vaccination)

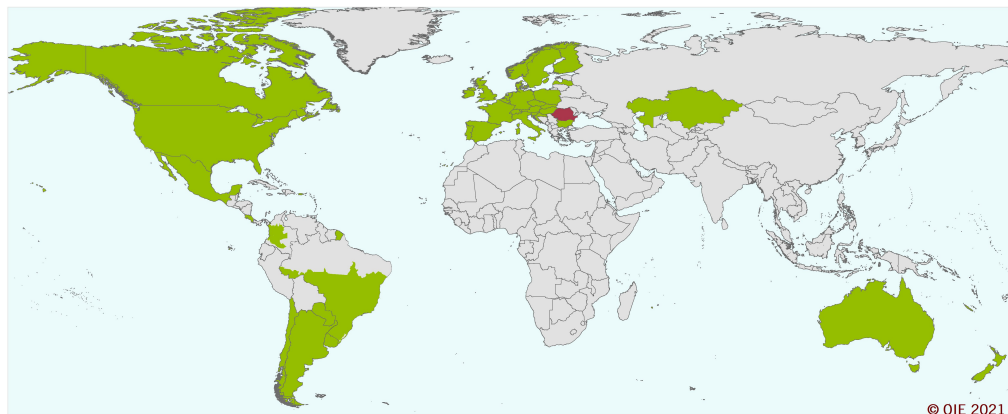


Electromicroscopy photo of CSFV

# CSF Global Distribution in 2022

OIE Members' official classical swine fever status map

Last update May 2021



- Members and zones recognised as free from CSF
- Suspension of CSF free status
- Countries and zones without an OIE official status for CSF

**North America :** Canada, Costa Rica, USA

**South America :** Argentina, Chile, Paraguay, Uruguay

**Oceania :** Australia, New Caledonia, New Zealand

**Europe :** Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Liechtenstein, Luxembourg, Malta, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, The Netherlands, United Kingdom

**Asia :** Kazakhstan

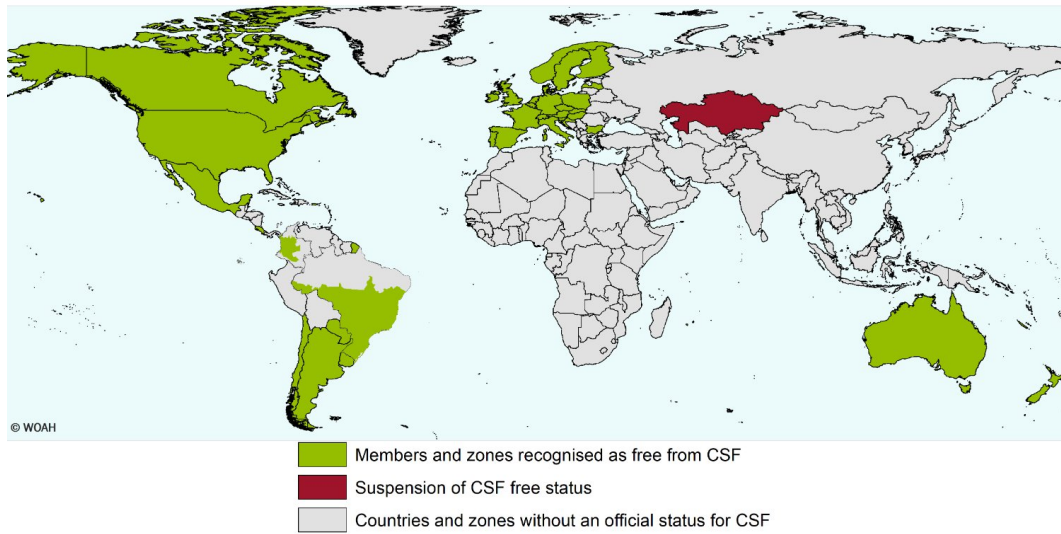
## 38 CSF free Members (2022.5 OIE)

Argentina	Denmark	Luxembourg	Slovakia
Australia	Finland	Malta	Slovenia
Austria	France	Mexico	Spain
Belgium	Germany	New Caledonia	Sweden
Bulgaria	Hungary	New Zealand	Switzerland
Canada	Ireland	Norway	The Netherlands
Chile	Italy	Paraguay	United Kingdom
Costa Rica	Kazakhstan	Poland	United States of America
Croatia	Latvia	Portugal	Uruguay
Czech Republic	Liechtenstein		

# CSF Global Distribution in 2023 (According to Resolution No. 18 (90th General Session, May 2023) )

WOAH Members' official classical swine fever status map

Last update May 2023



**North America :** Canada, Costa Rica, USA

**South America :** Argentina, Chile, Paraguay, Uruguay

**Oceania :** Australia, New Caledonia, New Zealand

**Europe :** Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Liechtenstein, Luxembourg, Malta, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, The Netherlands, United Kingdom 26

**Asia :** Kazakhstan

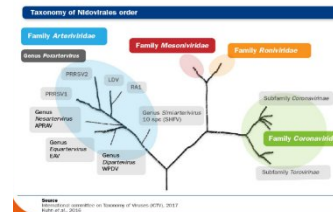
## 37 CSF free Members

Argentina	Denmark	Luxembourg	Slovakia
Australia	Finland	Malta	Slovenia
Austria	France	Mexico	Spain
Belgium	Germany	New Caledonia	Sweden
Bulgaria	Hungary	New Zealand	Switzerland
Canada	Ireland	Norway	The Netherlands
Chile	Italy	Paraguay	United Kingdom
Costa Rica	Latvia	Poland	United States of America
Croatia	Liechtenstein	Portugal	Uruguay
Czech Republic			

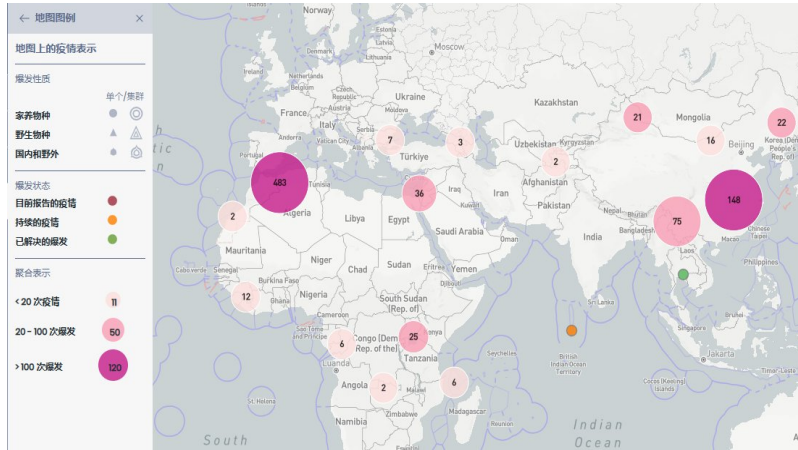
# Porcine reproductive and respiratory syndrome

PRRS is a disease caused by PRRS virus (PRRSV), which is characterized by reproductive disorders in sows and severe respiratory symptoms in piglets. PRRSV is a single-stranded positive-stranded RNA, divided into two genotypes, China's prevalence of genotype 2 strains, divided into nine lineages, there are at least 1, 3, 5, 8 a total of four lineages of strains. At present, lineage 1 strain is the dominant field strain in China, and it is easy to recombine with lineage 8 and lineage 3 strains, and the popular PRRSV strains are diversified, and the nucleic acid molecular detection products and antibody detection products developed by our company can provide effective means of prevention and control of the epidemic.

PRRSV { genotypes 1 (European type) , LV  
 genotypes 2 ( American type) , VR-2332, divided into nine lineages,



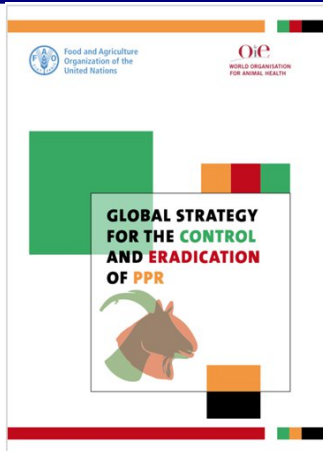
# The prevalence and danger of Peste des petits ruminants (PPR)



Peste des petits ruminants (PPR) is an acute viral disease by measles virus of the family Paramyxoviridae, and affects goats, sheep, and some wild relatives of domesticated small ruminants, as well as camels. Severe morbidity and mortality rates, It has a high economic impact in areas of Africa, the Middle East, and Asia. PPR is an WOAHL-listed disease and must be reported to the WOAHL. Countries have the possibility to apply for the official recognition by the WOAHL of their freedom from PPR for their whole country or for a zone, and for the endorsement of their national official control programme for PPR. Efficient PPR vaccines are available and can induce life-long protective immunity in vaccinated animals.



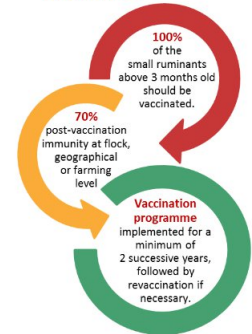
# Eradication program for Peste des petits ruminants



## Requirements

- **Quality vaccines:** OIE Vaccine banks ensure the procurement of high quality vaccines manufactured in line with OIE quality standards and delivered in a timely manner.
- **Uninterrupted cold chain:** besides acquiring high quality vaccines, it is essential to maintain their properties until administered to the animal.
- **Realistic estimation of required vaccine quantity** and suitable vial size.

## Objectives



- **Economic impact:** The PPR is considered to be a major obstacle to the development of sustainable agriculture across the developing world. Presence of disease can limit trade and export, import of new breeds, development of intensive livestock production. loss of animal protein for human consumption.
- Together, WOAH and the FAO developed the Global Control and Eradication Strategy of PPR in 2015, and have set “the goal of eradicating the disease by 2030”.

# Research progress on new diagnostic reagents for important animal diseases

- The impact of the major animal disease on global disasters
- Research progress on new diagnostic reagents for important animal diseases✓

# African swine fever

## Product Qualification

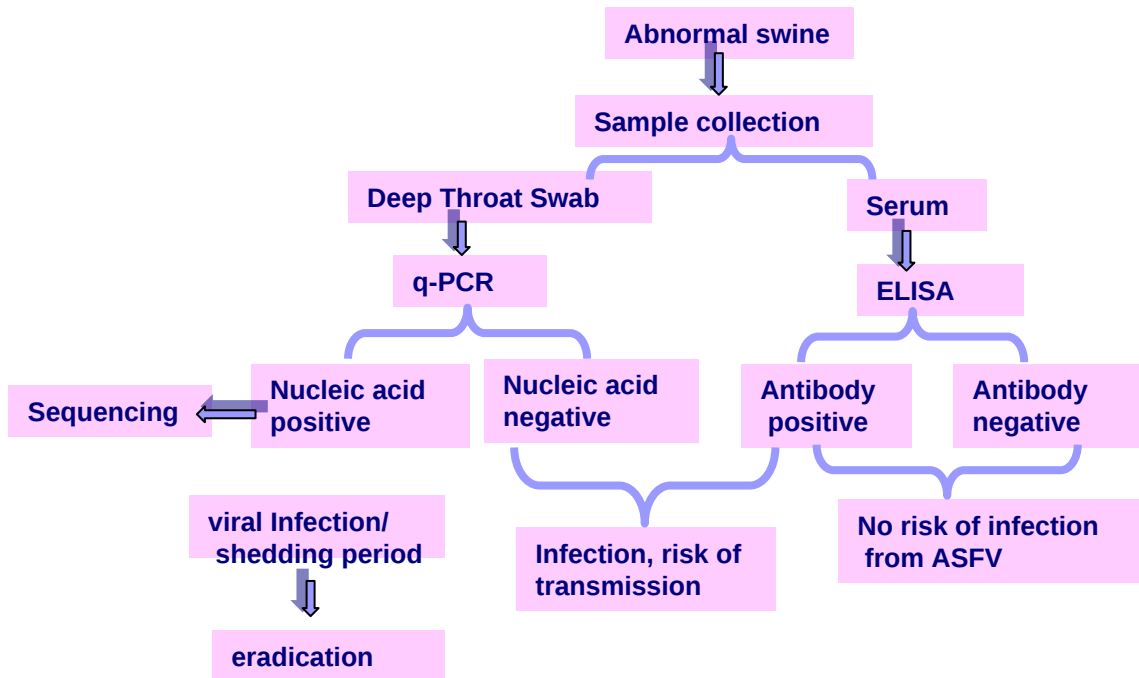
A real-time PCR kit for detection of ASFV Veterinary Drug Product Approval Number License issued by the Ministry of Agriculture and Rural Affairs of China [Veterinary Drug ShengZi 010708893]



ELISA Kit to Detect Antibody against ASFV Certificate of Registration of New Veterinary Drugs issued by the Ministry of Agriculture and Rural Affairs of China (2023) New Veterinary Drug Certificate No. 27



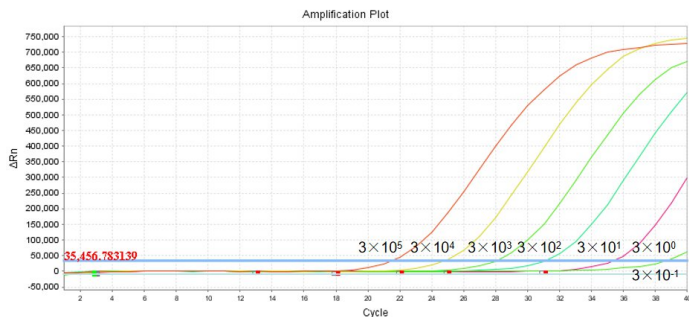
## Detection scheme





# A real-time PCR kit for detection of African swine fever virus

## Sensitivity assessment

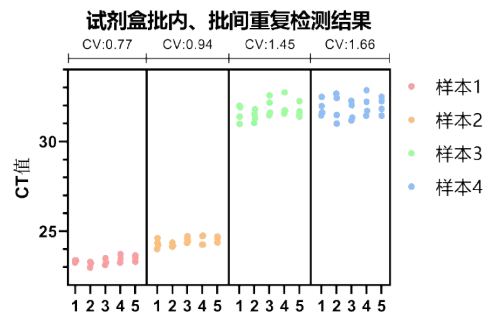


The detection limits of the real-time PCR kit for detection of African swine fever virus were 3copies/ $\mu$ L and the Ct values were 38.80.

## Specificity assessment

Project	Result
PRV standard positive	- (negative)
PPV standard positive	- (negative)
PRRSV standard positive PCV2 standard positive	- (negative)
CSFV C-strain standard positive Negative pork	(negative) (negative)
EMDV A+O standard positive Negative pig blood	(negative) (negative)
Negative pig serum	- (negative)
Negative swab	- (negative)

## Stability assessment



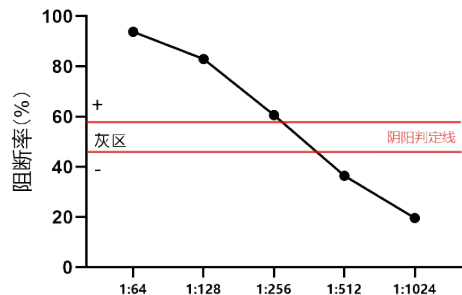
Different batches of kits

Kit intra- and inter-lot repeatability detection results

# ELISA Kit to Detect Antibody against African swine fever

## Sensitivity assessment

### Sensitivity detection results

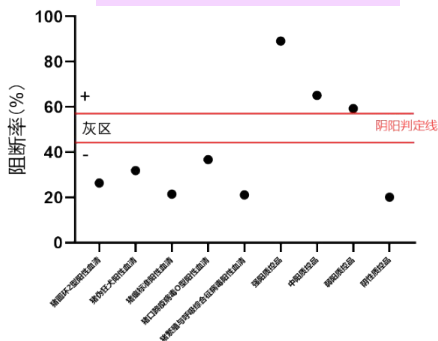


ASFV positive serum dilution concentration

Sensitivity validated up to 1:512 IU using standard positive ASFV serum dilutions.

## Specificity assessment

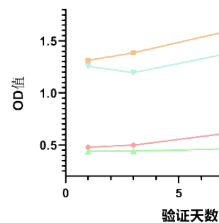
### Specific detection results



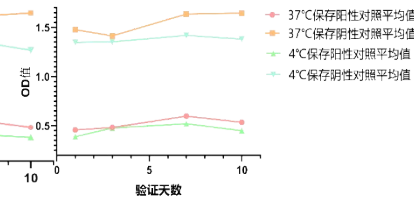
No cross-reactivity with five other swine-specific sera.

## Stability assessment

### 抗原包被板稳定性测试



### 酶标单抗稳定性测试



Each batch of product adopts standardized quality control serum plate verification and evaluation, and each performance parameter is stable and consistent.

Through 700 clinical sera and IFA results, the total coincidence rate was 96.1%, The specificity reached 98%.

# ASFV production

Product No.	Product Name	Specification
FZQ010-HZ	A real-time PCR kit for detection of African swine fever virus	50T
FZQ010T	A triple real-time PCR kit for detection of African swine fever virus VP72/CD2V/IMGF gene (Identification of weak strains)	50T
FZQ010I	A dual real-time PCR kit for detection of African swine fever virus VP72/I177L gene (Identification of vaccine strains in Vietnam)	50T
FZE024Z	Blocking ELISA Kit to Detect Antibody against African swine fever virus	192T/480T

# Porcine reproductive and respiratory syndrome

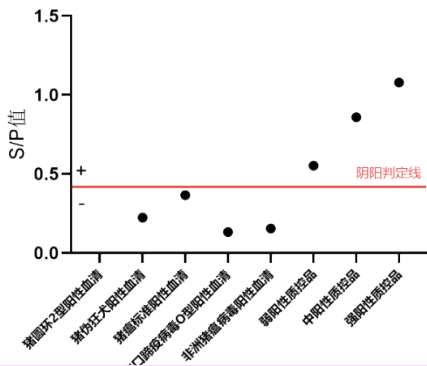
- **Yisen-Bio** have obtained Certificate of Registration of New Veterinary Drugs issued by the Ministry of Agriculture and Rural Affairs of China (2023) New Veterinary Drug Certificate No. 27 for ELISA Kit to Detect Antibody against PRRSV.
- 猪繁殖与呼吸综合征病毒美洲株/欧洲株双重荧光PCR检测试剂盒通过专家委员会初步评审。



# Porcine reproductive and respiratory syndrome

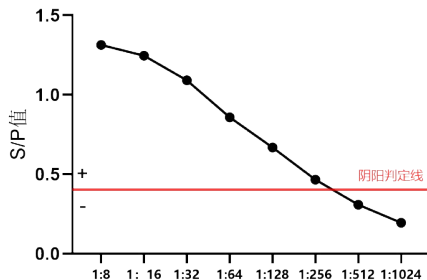
## ELISA Kit to Detect Antibody against Porcine reproductive and respiratory syndrome virus

Specific detection results



Specificity was verified by repeating the test with 5 specific sera, and the results showed that the ELISA Kit to detect Antibody against PRRSV had no cross-reactivity.

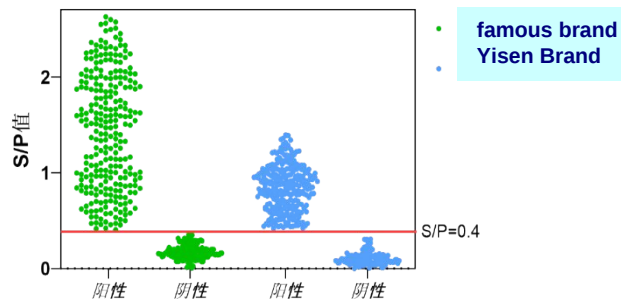
Sensitivity detection results



Standardized positive serum dilution concentrations

Sensitivity validated up to 1:512 IU using standard positive serum dilutions for porcine reproductive and respiratory syndrome.

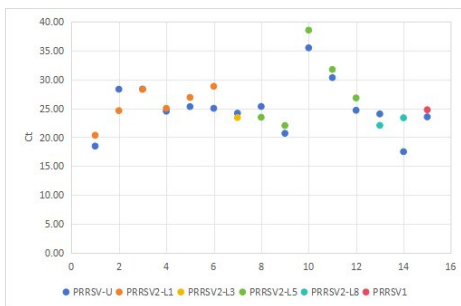
采用500份已知背景临床血清，通过与进口品牌进行比对，符合率达到92.14%



Using 700 clinical sera of known background, a compliance rate of 92.14% was achieved by comparison with imported brands

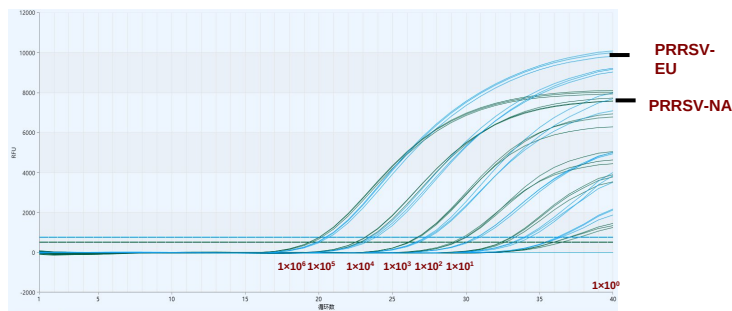
# PRRSV series fluorescent PCR

A universal real-time PCR kit of PRRSV



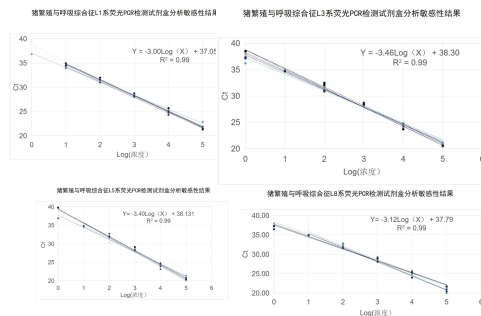
The universal real-time PCR kit for PRRSV can detect the L1, L3, L5, L8 of PRRSV-2, as well as the European strains.

A dual real-time PCR kit for detection of PRRSV North American/European strain



The dual real-time PCR methods for the North American/European strains of PRRSV were able to stably detect 10copies/ $\mu$ L of standard plasmid.

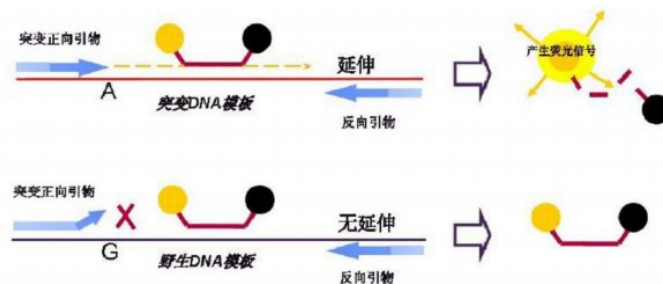
A real-time PCR kit for detection of PRRSV North American Strain L1, L3, L5, L8



The real-time PCR assay for PRRSV North American Strain L1, L3, L5, L8 had low detection limits and good reproducibility data for all four profiles, with CV values <3%.

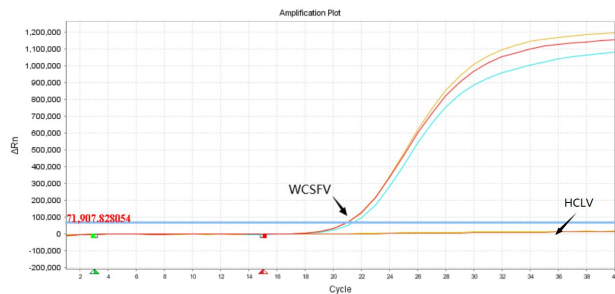
# Amplification Refractory Mutation System (ARMS)

- Amplification Refractory Mutation System (ARMS) is a molecular biology technique used to detect specific mutations in nucleic acids.
- Principle: ARMS-qPCR utilizes known point mutations to design primers to distinguish templates with certain point mutations from normal templates by PCR reaction.
- Keys: Utilizing Taq DNA polymerase's lack of 3'-5' exonuclease activity, when the 3' end base of the primer is not complementary to the template base, the general heat-resistant DNA polymerase cannot extend.
- Application: For different known mutations, the design of appropriate primers can directly achieve the purpose of distinguishing different subtypes of genes by PCR method.

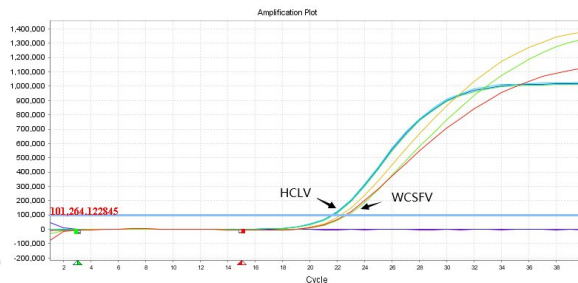


ARMS Technology Schematic

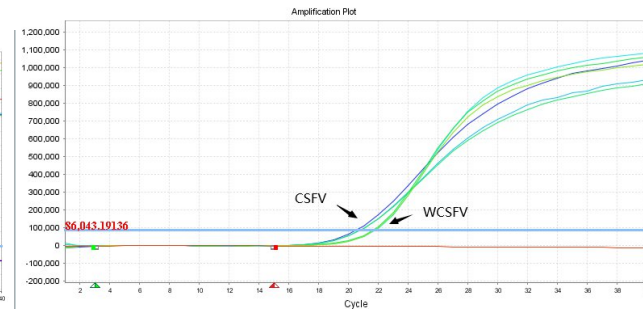
# CSFV ARMS-qPCR identification kits



ARMS-qPCR kit for detection of CSFV wild strains



ARMS-qPCR kit for identification of C-strain and CSFV wild strains



ARMS-qPCR kit for identification of CSFV and the wild strains

- CSFV ARMS-qPCR is a fluorescent PCR amplification and identification technology based on the difference of SNP sites in the 5'UTR between and C-strains and CSFV wild strains and the introduction of ARMS and two fluorescent probes with different reporter groups.
- ARMS-qPCR exhibits high sensitivity, capable of detecting mutations as low as 1%. It is a cost-effective, user-friendly, and rapid technology, providing results within 0.5~1.5 hours. This method stands out as one of the most widely employed technologies in molecular differential diagnosis products.



# CSFV ARMS-qPCR identification kits

No.	Samples	ARMS-qPCR kit for identification of C-strain and CSFV wild strains	
		wild strains-Ct (FAM)	C-strain-Ct (VIC)
1	BVDV	Unde	Unde
2	PRRSV	Unde	Unde
3	PEDV	Unde	Unde
4	PRV	Unde	Unde
5	PCV 2	Unde	Unde
6	PPV	Unde	Unde

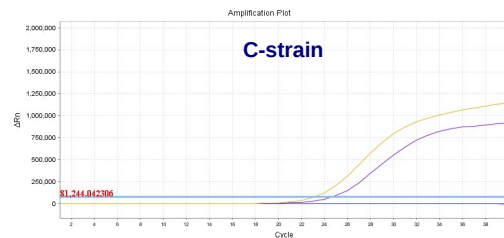
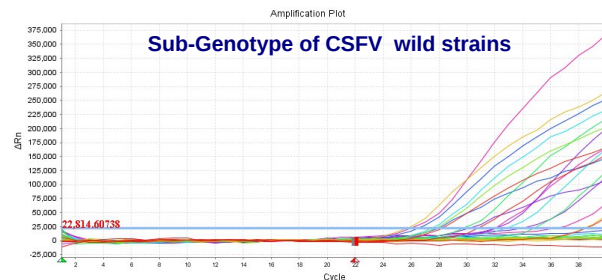
**Specificity results of ARMS-qPCR kit for identification of C-strain and CSFV wild strains**

No.	Plasmid concentration (copies/ $\mu$ L)	ARMS-qPCR kit for identification of C-strain and CSFV wild strains	
		wild strains-Ct (FAM)	C-strain-Ct (VIC)
1	$1 \times 10^5$	23.23	22.11
2	$1 \times 10^4$	26.47	25.49
3	$1 \times 10^3$	29.69	28.77
4	$1 \times 10^2$	32.96	31.85
5	$1 \times 10^1$	36.87	35.99
6	$1 \times 10^0$	Unde	39.41
7	$1 \times 10^{-1}$	Unde	Unde

**Analytical sensitivity results of ARMS-qPCR kit for identification of C-strain and CSFV wild strains**

## Diagnostic sensitivity results of ARMS-qPCR kit for identification of C-strain and CSFV Sub-Genotypes of wild strains

No.	Isolate name	Sub-Genotype	ARMS-qPCR kit for identification of C-strain and CSFV wild strains	
			wild strains-Ct (FAM)	C-strain-Ct (VIC)
1	SM.1	1.1	28.32	Unde
2	SM.1973	1.1	38.04	Unde
3	HeN1.1992	1.1	25.35	Unde
4	HuNCS.2020	2.1	19.06	Unde
5	YuNHZ1.2023	2.1b	22.70	Unde
6	HuB1.2015	2.1b	25.33	Unde
7	GD2.2017	2.1c	30.89	Unde
8	HuB2.2023	2.1c	34.43	Unde
9	JL1.1999	2.1h	31.65	Unde
10	HeN.2016	2.1h	28.99	Unde
11	AH1.1999	2.2	27.63	Unde
12	GD1.1990	2.3	29.84	Unde
13	TW1.2007	3.4	28.32	Unde
14	C-strain1	1.1	Unde	23.27
15	C-strain2	1.1	Unde	24.80

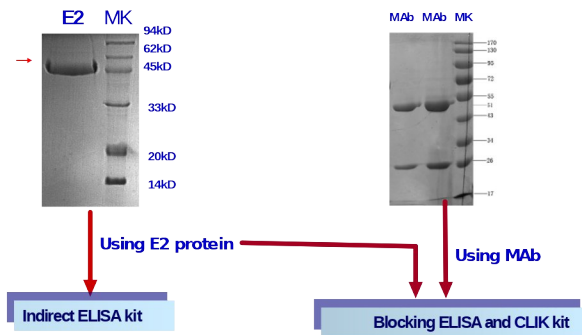


# ELISA

- In China , even in other area, ELISA technology has become the most important method for antibody monitoring and evaluation of the immune effect after CSF vaccination. Help to develop scientific vaccination program.
- CSFV E2 protein was expressed in Baculovirus Expression System.(National patent)
- A novel E2 MAbs called 1C8 had been selected which can combine with CSFV specifically in our Lab. (National patent)
- ELISA for the detection of antibodies against the viral E2 glycoprotein are either designed as blocking, indirect ELISA as CLIK kits.
  - Indirect ELISA Kit to Detect Antibody against CSFV
  - (The first national registration certificate of new veterinary drugs for CSFV ELISA antibody test in 2016)
  - Blocking ELISA Kit to Detect the Antibody against CSFV(The national registration certificate of new veterinary drugs in 2020)
- CLIA Kit to Detect Antibody against CSFV(The national registration certificate of new veterinary drugs in 2021)

Recombinant E2 protein purified

MAb affinity chromatography

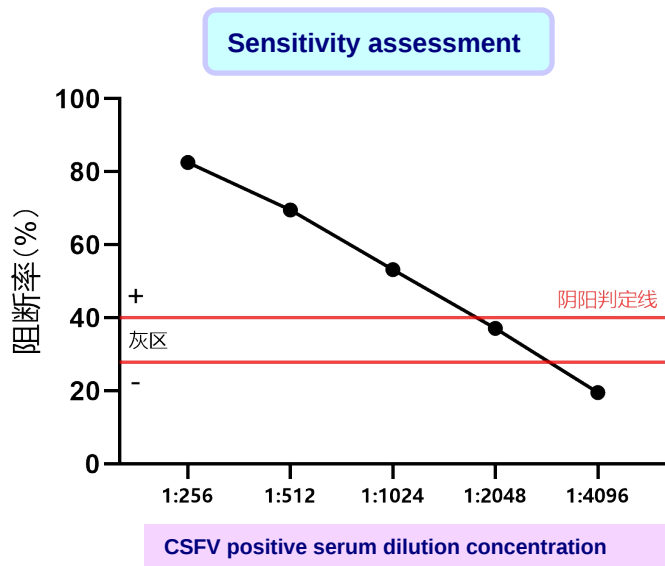


# Blocking ELISA Kit to Detect the Antibody against CSFV

Sensitivity validated up to 1:1024 IU using standard positive CSFV serum dilutions.

Compare the analytical sensitivity of B-ELISA and IDEXX kit

serum samples	domestic B-ELISA kit (pos≥45% ; neg < 45%)		IDEXX kit (pos≥40% ; sus30~40% ; neg≤30)	
	Percentage	Result	Percentage	Result
positive serum No1. 1:256	82.57%	pos	76.83%	pos
positive serum No1. 1:512	71.14%	pos	64.82%	pos
positive serum No1. 1:1024	57.10%	pos	46.62%	pos
positive serum No1. 1:2048	41.88%	neg	36.80%	sus
positive serum No1. 1:4096	24.53%	neg	25.94%	neg
positive serum No1. 1:8192	23.58%	neg	15.89%	neg
positive serum No1. 1:16384	15.14%	neg	5.03%	neg
positive serum No2. 1:2	85.65%	pos	78.97%	pos
positive serum No2. 1:4	79.89%	pos	71.98%	pos
positive serum No2. 1:8	67.43%	pos	60.20%	pos
positive serum No2. 1:16	51.97%	pos	42.92%	pos
positive serum No2. 1:32	36.75%	neg	33.28%	sus
positive serum No2. 1:64	28.39%	neg	24.61%	neg
positive serum No2. 1:128	17.19%	neg	16.06%	neg
positive serum No2. 1:256	9.15%	neg	11.22%	neg
positive serum No2. 1:512	7.81%	neg	10.67%	neg
positive serum No2. 1:1024	6.86%	neg	10.30%	neg
positive serum No2. 1:2048	3.08%	neg	9.68%	neg
positive serum No2. 1:4096	-3.94%	neg	6.29%	neg

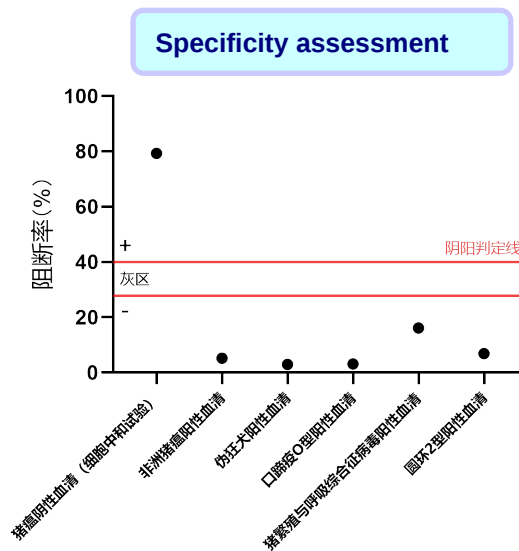


# Blocking ELISA Kit to Detect the Antibody against CSFV

- Good specificity, differential detection for CSFV antibody and BVDV. Using other five specific sera to repeat the test, the results show that the blocking ELISA Kit to Detect Antibody against CSFV has no cross-reactivity.

Compare the specificity of B-ELISA and IDEXX kit

sample	B-ELISA kit (pos≥45% ; neg < 45%)		IDEXX kit (pos≥40% ; sus30-40% ; neg≤30)	
positive serum No1.	94.61%	pos	92.61%	pos
weakly positive serum No1.	68.28%	pos	64.30%	pos
weakly positive serum No2.	72.63%	pos	67.24%	pos
negative serum	4.94%	neg	6.25%	neg
ASFV serum	18.99%	neg	4.49%	neg
PRV serum	1.22%	neg	9.90%	neg
PCV2 serum	16.42%	neg	2.32%	neg
FMD positive serum No1.	3.53%	neg	8.88%	neg
FMD positive serum No2.	4.49%	neg	14.85%	neg
PRRSV serum	23.28%	阴性	22.43%	阴性



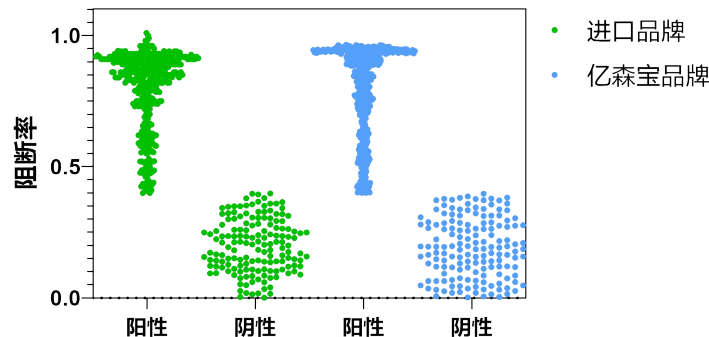
# Blocking ELISA Kit to Detect the Antibody against CSFV

- The coincidence of the B-ELISA and FAVN was 92.6% by 1000 clinical serum.

Coincidence of the B-ELISA and FAVN

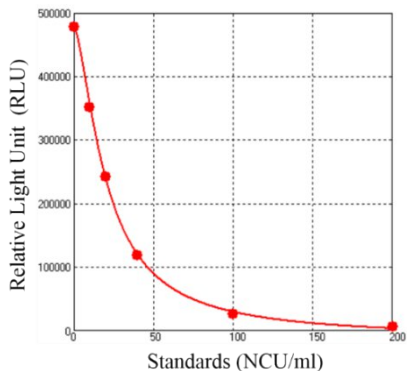
		FAVN		total
		+	-	
B-ELISA	+	200	14	214
	-	15	163	178
total		215	177	392
Pos-Co		93.0% (200/215)		
Neg-Co		92.1% (163/177)		
total-Co		92.6% (200+163) /392		

- The coincidence of the B-ELISA and IDEXX kit was 94.4% by 1000 clinical serum.



# Chemiluminescence Immunoassay (CLIA) Kit to Detect Antibody against CSFV

Our goal: No best!  $\Rightarrow$  only always looking for better!



## Coincidence of CLIA Kit and FVNT

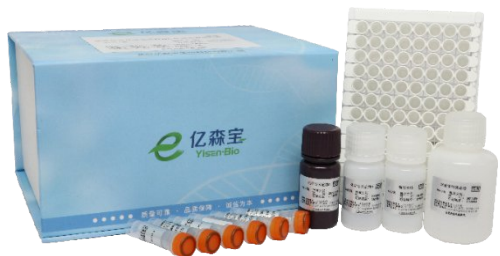
		FVNT		total
		+	-	
CLIA Kit	+	182	9	191
	-	9	191	200
total		191	200	391
Pos-Co		95.3% (=182/191)		
Neg-Co		95.5% (=191/200)		
total-Co		95.4% = (182+191) / 391		



➤ Production approval number obtained in 2023.

- CLIA is a new technique with high sensitivity to detect antibody and antigen. CLIA detection combining with signal amplification is one of the most popular techniques, which can be used for high throughput detection because it does not need external light source. The CL signal produced by the typical horseradish peroxidase-H<sub>2</sub>O<sub>2</sub>-luminol system.
- CLIA is now internationally recognized as an advanced labeling immunoassay technique, and has a higher accuracy and specificity, making it one of the most important techniques in testing methods.
- Combined with E2 protein and McAb, based on competitive ELISA principle, CLIA Kit to Detect Antibody against CSFV was developed. The results were determined by relative quantification of CSFV antibody levels in serum using a series of calibrators designed for the kit. As for 392 clinical serum, coincidence of domestic B-ELISA and IDEXX kit was 92.6%.

# CLIA Kit to Detect Antibody against CSFV



Can be used with other CLIA products

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CLIA Kit to Detect Antibody against ASFV

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CLIA Kit to Detect Antibody against PRRSV

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CLIA Kit to Detect Antibody against FMDV

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CLIA Kit to Detect Antibody against PPRV

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CLIA Kit to Detect Antibody against Brucella

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■ **Advantages:**

- Substrate molecular is very stable.
- Substrate is very sensitive.
- Signal takes on wide linear range.
- Good repeatability.
- Luminous value can be converted to antibody titre.
- Full automation possible.



# Antibody Test Strips for Sheep and Goats Peste des Petits Ruminants Virus(PPRV)

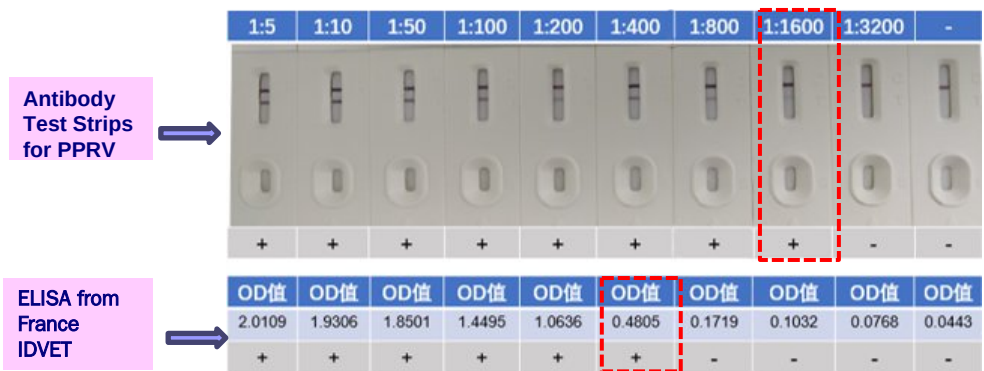
This antibody test strips has been approved by the Ministry of Agriculture and Rural Affairs (MOARA) of China as a new veterinary drug registration certificate (Certificate No.37: (2022) ),and veterinary drug production approval number (Veterinary Drug Shengzhi 010708927) ,will become a national standard,this kit is used for the detection of PPRV antibody in sheep serum. It is easy and convenient to operate, and the result will be available within 15 minutes, which is very practical for on-site quarantine and epidemic monitoring.



# Antibody Test Strips for Sheep and Goats Peste des Petits Ruminants Virus(PPRV)

- On-site inspection; 15 minutes to complete; Perfect for customs inspection.
- The sensitivity of the assay Card is higher than that of the ELISA test kit.

方法学	标记物	检测方法	反应时间	准确性	优劣势
ELISA	酶	酶标仪	30--60min	高	需专业人员,耗时长,相对准确
胶体金快检方法	胶体金	目测/分析仪	10min	较高	操作简单,可实现不同能力人员检测,用时短,出结果迅速



羊小反出兽医病毒抗体检测试纸条检测灵敏度较ELISA抗体检测试剂盒高两个稀释度

# We can provide reference materials in the field of animal disease detection

## Applicable groups:

- Animal Disease Prevention and Control Organization
- Wildlife Disease Detection Laboratory
- Customs Animal Testing Center
- Farm veterinary self-examination laboratories
- Third-party animal disease testing laboratories
- Veterinary laboratories of research institutes
- Comparison of experiment organizers, etc.

## Swine disease nucleic acid reference materials

Product No.	Product Name	Titer	规格
CNP001	Swine fever virus (CSFV) nucleic acid reference material	$10^3\sim 10^4$ copies/ $\mu$ L	0.2mL
CNP002	Porcine parvovirus (PPV) nucleic acid reference material	$10^3\sim 10^4$ copies/ $\mu$ L	0.2mL
CNP003	Porcine reproductive and Respiratory syndrome virus L8 (PRRSV L8) nucleic acid reference material	$10^3\sim 10^4$ copies/ $\mu$ L	0.2mL
CNP004	Highly pathogenic and classical porcine reproductive and respiratory syndrome virus (HP-P) nucleic acid reference material	$10^3\sim 10^4$ copies/ $\mu$ L	0.2mL
CNP005	Porcine reproductive and Respiratory syndrome virus L5 (PRRSV L5) nucleic acid reference material	$10^3\sim 10^4$ copies/ $\mu$ L	0.2mL
CNP006	Pseudorabies virus (PRV) nucleic acid reference material	$10^3\sim 10^4$ copies/ $\mu$ L	0.2mL
CNP007	Porcine Circovirus type 2 (PCV 2) nucleic acid reference material	$10^3\sim 10^4$ copies/ $\mu$ L	0.2mL
CNP008	African swine fever virus (ASFV) nucleic acid reference material	$10^3\sim 10^4$ copies/ $\mu$ L	0.2mL

## Swine disease serum quality control(serum)

Product No.	Product Name	Titer	Specification
CSP001	Reference Positive Serum of Classical Swine Fever Virus (CSFV)	ELISA Validation	0.5mL
CSP002	Reference Positive Serum of Porcine foot and mouth disease virus (FMDV) - type O	ELISA Validation	0.5mL
CSP003	Reference Positive Serum of African swine fever virus (ASFV)	ELISA Validation	0.5mL

## Swine disease serum quality control(Nucleic Acid)

Product No.	Product Name	数量	Specification
CNP-CSFV-5	Sample panel for proficiency testing of Classical swine fever virus (CSFV) Nucleic Acid Assay	5 tubes/set	0.5mL/tube
CNP-ASFV-5	Sample panel for proficiency testing of African swine fever (ASFV) Nucleic Acid Assay	5 tubes/set	0.5mL/tube
CSP-CSFV-5	Sample panel for proficiency testing of Classical swine fever virus (CSFV) Serological Assay	5 tubes/set	0.5mL/tube

# We can provide standard substances in the field of animal disease detection

## Avian disease nucleic acid reference materials

Product No.	Product Name	Specification
CNB001	Infectious bursal disease (IBDV) disease nucleic acid reference material	0.2mL
CNB002	Infectious laryngotracheitis(ILTV)disease nucleic acid reference material	0.2mL
CNB003	Newcastle disease(NDV)nucleic acid reference material	0.2mL

## Bovine and sheep diseases nucleic acid reference materials

Product No.	Product Name	Specification
CNR001	Goat poxvirus (GPV) disease nucleic acid reference material	0.2mL
CNR002	Contagious caprine pleuropneumonia (CCPPV) nucleic acid reference material	0.2mL
CNR003	Ovine Streptococcosis Septicemia (SS) nucleic acid reference material	0.2mL

# Thank you for your attention!

In recent years, in the process of global economic integration is accelerating, constantly outbreaks of animal diseases, zoonotic diseases in the background. Beijing Yisenbao Biotechnology Co., Ltd. is committed to developing cooperation and communication with neighboring Asia-Pacific regions and countries around the world, including Eurasia, based on the technological advantages of the enterprise, reflecting the importance of our country, as a large farming country, to the global cooperation in controlling and eradicating epidemics, and also showing our determination to actively participate in the eradication of animal epidemics.

## Looking forward to our cooperation.

