WOAH Reference Laboratory Reports Activities 2023

Activities in 2023

This report has been submitted : 10 juin 2024 09:19

Laboratory Information

Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	Classical swine fever
Address of laboratory:	China Institute of Veterinary Drug Control (IVDC)/Center for Veterinary Drug Evaluation (CVDE) Department of Swine Viral Biologics Inspection No.8 Zhongguancun South Street Haidian District Beijing 100081 CHINA (PEOPLES REP. OF)
Tel.:	+86-010 612 55 400
E-mail address:	wq551@vip.sina.com
Website:	http://www.ivdc.org.cn/
Name (including Title) of Head of Laboratory (Responsible Official):	Prof. Weizhong Huang,General Director of IVDC and CVDE
Name (including Title and Position) of WOAH Reference Expert:	Prof. Qin Wang, Designated expert
Which of the following defines your laboratory? Check all that apply:	Governmental

TOR1: DIAGNOSTIC METHODS

1. Did your laboratory perform diagnostic tests for the specified disease/topic for purposes such as disease diagnosis, screening of animals for export, surveillance, etc.? (Not for quality control, proficiency testing or staff training)

Yes

Diagnostic Test	Indicated in WOAH Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
Indirect ELISA Kit to Detect Antibody against Classical Swine Fever Virus		0	0
Blocking ELISA Kit to Detect the Antibody against Classical Swine Fever Virus		2309	0
Fluorescent antibody virus neutralization test(CSFV)		11	0
Direct diagnostic tests		Nationally	Internationally
Reverse-transcription quantitative polymerase chain reaction (CSFV)		1347	0
Reverse-transcription nest polymerase chain reaction (CSFV)		59	0
Genetic Typing (CSFV phylogenetic analysis)		11	0
Virus isolation (CSFV)		11	0
Fluorescent antibody test (CSFV)		0	0

TOR2: REFERENCE MATERIAL

2. Did your laboratory produce or supply imported standard reference reagents officially recognised by WOAH?

No

3. Did your laboratory supply standard reference reagents (nonWOAH-approved) and/or other diagnostic reagents to WOAH Members?

Yes

TYPE OF REAGENT AVAILABLE	RELATED DIAGNOSTIC TEST	PRODUCED/ PROVIDE	AMOUNT SUPPLIED NATIONALLY (ML, MG)	AMOUNT SUPPLIED INTERNATIONALLY (ML, MG)	NO. OF RECIPIENT WOAH MEMBER COUNTRIES	COUNTRY OF RECIPIENTS
National reference positive Serum of C-strain vaccine (1ml/Ampoule)	C-strain vaccine test	Produced	639ml	0	1	CHINA (PEOPLE'S REP. OF),
National reference negative serum of CSFV (1ml/Ampoule)	Neutralization test in vitro	Produced	26ml	0	1	CHINA (PEOPLE'S REP. OF),
National reference positive serum of CSFV (1ml/Ampoule)	Neutralization test in vitro	Produced	44ml	0	1	CHINA (PEOPLE'S REP. OF),
National reference negative serum of CSFV	Neutralization test in rabbit	Produced	6ml	0	1	CHINA (PEOPLE'S REP. OF),
National reference positive serum of CSFV(1:(8.5±1.3))	Neutralization test in rabbit	Produced	29ml	0	1	CHINA (PEOPLE'S REP. OF),
National reference positive serum of CSFV(1:847±1))	Neutralization test in rabbit	Produced	59ml	0	1	CHINA (PEOPLE'S REP. OF),
National reference negative serum of CSFV	ELISA/NPLA/ AVN for antibody detection, virus Isolation, FAT, IPT for antigen detection	Produced	18ml	0	1	CHINA (PEOPLE'S REP. OF),
National reference positive serum of	ELISA/NPLA/ AVN for antibody	Produced	17ml	0	1	CHINA (PEOPLE'S REP. OF),
National reference positive serum of CSFV (weak 2)	ELISA/NPLA/ AVN for antibody detection, virus Isolation, FAT, IPT for antigen detection	Produced	21ml	0	1	CHINA (PEOPLE'S REP. OF),
National reference positive serum of CSFV (strong)	ELISA/NPLA/ AVN for antibody detection, virus Isolation, FAT, IPT for antigen detection	Produced	42ml	0	1	CHINA (PEOPLE'S REP. OF),
National reference negative swine serum (0.5ml/tube)	ELISA/NPLA/ AVN for antibody detection, virus Isolation, FAT, IPT for antigen detection	Produced	14ml	0	1	CHINA (PEOPLE'S REP. OF),
CSFV E2 monoclonal antibody(1C8) (0.5ml/tube)	ELISA/NPLA/ AVN for antibody detection, virus Isolation, FAT, IPT for antigen detection	Produced	66ml	0	11	CHINA (PEOPLE'S REP. OF),
Indirect immunofluorescence assay(IFA) kit for CSFV (50µl/well, 200 well/kit,)	IFA for CSFV antigen or antibody detection	Produced	120ml	0	1	CHINA (PEOPLE'S REP. OF),
CSFV RT-nPCR kit (24 reactions/kit)	Molecular biological detection	Produced	11 kits	0	1	CHINA (PEOPLE'S REP. OF),
Reference Positive Serum of PRV	Detection for extraneous agents of C-strain vaccine	Produced	455ml	0	1	CHINA (PEOPLE'S REP. OF),
Reference Positive Serum of PCV II	Detection for extraneous agents of C-strain vaccine	Produced	71ml	0	1	CHINA (PEOPLE'S REP. OF),
Reference Positive Serum of PCV II(lyophilized)	Detection for extraneous agents of C-strain vaccine	Produced	25ml	0	1	CHINA (PEOPLE'S REP. OF),
Reference strain of PRRSV	Detection for extraneous agents of C-strain vaccine	Produced	10ml	0	1	CHINA (PEOPLE'S REP. OF),

Reference Positive	FAVN/NPLA/ELISA	Produced	108ml	0	1	CHINA (PEOPLE'S REP. OF),

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAH Members?

No

TOR3: NEW PROCEDURES

6. Did your laboratory develop new diagnostic methods for the designated pathogen or disease?

Yes

7. Did your laboratory validate diagnostic methods according to WOAH Standards for the designated pathogen or disease?

Yes

NAME OF THE NEW TEST OR DIAGNOSTIC METHOD DEVELOPED	DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)
A quadruple fluorescence quantitative PCR method for the identification of wild strains of african swine fever and gene-deficient strains	Zuo, X., Peng, G., Xia, Y. et al. A quadruple fluorescence quantitative PCR method for the identification of wild strains of african swine fever and gene-deficient strains. Virol J 20, 150 (2023). https://doi.org/10.1186/s12985-023-02111-1
Establishment and Preliminary Application of a Dual Real-time RT-PCR Assay for CSFV and BVDV	ZOU H , XIA YJ , LI L , XU L , ZHAO JJ , WANG TJ, ZHANG QY, SONG ZH. Acta Veterinaria et Zootechnica Sinica, 2023, 54 (10): 4422-4427

8. Did your laboratory develop new vaccines for the designated pathogen or disease?

Yes

9. Did your laboratory validate vaccines according to WOAH Standards for the designated pathogen or disease?

Yes

NAME OF THE NEW VACCINE DEVELOPED	DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)
vC/SM3'UTRN-CARD/tPAsS1NCOE, CSFV/PEDV bivalent vaccine	Publication. Wang H, Yi W, Qin H, Wang Q, Guo R, Pan Z. A Genetically Engineered Bivalent Vaccine Coexpressing a Molecular Adjuvant against Classical Swine Fever and Porcine Epidemic Diarrhea. Int J Mol Sci. 2023 Jul 26;24(15):11954. doi: 10.3390/ijms241511954. PMID: 37569329; PMCID: PMC10419043.
CSFV DIVA	Publication. Yi W, Wang H, Qin H, Wang Q, Guo R, Wen G, Pan Z. Construction and efficacy of a new live chimeric C-strain vaccine with DIVA characteristics against classical swine fever. Vaccine. 2023, 17;41(12): 2003-2012. doi: 10.1016/j.vaccine.2023.02.044. Epub 2023 Feb 18. PMID: 36803898.

TOR4: DIAGNOSTIC TESTING FACILITIES

10. Did your laboratory carry out diagnostic testing for other WOAH Members?

No

11. Did your laboratory provide expert advice in technical consultancies on the request of an WOAH Member?

Yes

NAME OF THE WOAH MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
BANGLADESH CAMBODIA CHINA (PEOPLE'S REP. OF) KAZAKHSTAN LAOS MALAYSIA PHILIPPINES RUSSIA SEYCHELLES SRI LANKA UZBEKISTAN VIETNAM	Standard, Diagnosis, Epidemiology, and Control of CSF	Conference and online meeting

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOAH Members other than the own?

No

13. In exercising your activities, have you identified any regulatory research needs* relevant for WOAH?

No

TOR6: EPIZOOLOGICAL DATA

14. Did your Laboratory collect epidemiological data relevant to international disease control?

Yes

IF THE ANSWER IS YES, PLEASE PROVIDE DETAILS OF THE DATA COLLECTED:

The annual reports of the antigen and antibody surveillance and situation of CSFV from Key provinces in pig farms, slaughterhouses and CNAS certified laboratories in mainland China, update to CSFinfo database developed by CSFRL in IVDC.

15. Did your laboratory disseminate epidemiological data that had been processed and analysed?

Yes

IF THE ANSWER IS YES, PLEASE PROVIDE DETAILS OF THE DATA COLLECTED:

1. The annual surveillance report was submitted to Ministry of Agriculture and Rural Affairs with CSFV epidemiologic data was processed and analysed.
2. Peer-reviewed research papers were published in academic journals.
3. Organize International CSFV Symposium and present our data in the conference
4. Attend academic meetings and give presentations.

16. What method of dissemination of information is most often used by your laboratory? (Indicate in the appropriate box the number by category and list the details in the box)

a) Articles published in peer-reviewed journals:

6

1.Zuo, X., Peng, G., Xia, Y. et al. A quadruple fluorescence quantitative PCR method for the identification of wild strains of african swine fever and gene-deficient strains. Virol J 20, 150 (2023). https://doi.org/10.1186/s12985-023-02111-1
2.Zou H, Xia YJ, Li L, Xu L, Zhao JJ , Wang TJ, Zhang QY , Song ZH. Establishment and Preliminary Application of a Dual Real-time RT-PCR Assay for CSFV and BVDV. Acta Veterinaria et Zootechnica Sinica. 2023,54(10) : 4422-4427.*
3.Wang H, Yi W, Qin H, Wang Q, Guo R, Pan Z. A genetically engineered bivalent vaccine coexpressing a molecular adjuvant against classical swine fever and porcine epidemic diarrhea. Int J Mol Sci. 2023 Jul 26;24(15):11954.
4.Yi W, Wang H, Qin H, Wang Q, Guo R, Wen G, Pan Z. Construction and efficacy of a new live chimeric C-strain vaccine with DIVA characteristics against classical swine fever. Vaccine. 2023, 17;41(12): 2003-2012. doi: 10.1016/j.vaccine.2023.02.044. Epub 2023 Feb 18. PMID: 36803898.
5.Chen ZY, Xu L, Xia YJ, Song XY, Liu YB. Research progress on the attenuated mechanism of swine fever virus. China Journal of Veterinary Drug. 2023, 57(9): 87-94.
6.Zou Hong, Luo Gan, Li Ling, Xia YJ, Xu L, Zhao JJ, Zhang QY. Research Progress on the interaction between classical swine fever virus non-structural protein NS4B and host proteins. China Journal of Veterinary Medicine. 2023, 59(12): 88-93.

b) International conferences:

7

1.Eradication Strategy for CSFV. Speaker : Qin Wang. The 11th Leman China Swine Conference, Changsha China, 2023.3.23
2.Current status of CSFV Epidemics and Research Progress on New Diagnostic Technology. Speaker : Qin Wang. The 4th Annual Veterinary Diagostic Conference, China, March 29-31th, 2023
3.Animal disease prevention and control and technical standardization. Speaker : Qin Wang. Seminar on Standardization Cooperation for Developing Countries, Changzhou, China April 25, 2023. (online)
4.Animal disease prevention and control and technical standardization. Speaker : Qin Wang. Seminar on Food and Agricultural Products Standardization for Developing Countries, Changzhou, China, May 30, 2023. (online)
5.Research Progress on New diagnostic technologies for Classical Swine Fever. Speaker : Qin Wang. International Symposium on Classical Swine Fever and Other Important Swine Infectious Diseases, Wuhan, China, 27th -29th Nov 2023.
6.Epidemiology, prevention and control of Classical swine fever in China. Speaker :Yebing Liu. International Symposium on Classical Swine Fever and Other Important Swine Infectious Diseases, Wuhan, China, 27th -29th Nov 2023.
7.Development and application of pseudoviruses on classical swine fever and African swine fever. Speaker : Yingju Xia. International Symposium on Classical Swine Fever and Other Important Swine Infectious Diseases, Wuhan, China, 27th -29th Nov 2023.

c) National conferences:

3

1.Study and Application of Novel Diagnostic Technologies for Important Animal Diseases. New Veterinary Technology Training Program by Sichuan Veterinary Association. Speaker : Qin Wang. Sichuan Chengdu, May 2023.
2.Diagostic Technology and Eradication Strategy for CSF. CSF Elimination Forum. The 10th Vetrinary Congress. Speaker and Session Chairman: Qin Wang. Nanjing China. August 2023.
3.CSF Eradication Strategy. 2023 Veterinary Epidemiology Training of Chongqing Animal Disease Control Center. Speaker : Qin Wang. Chongqing, China. September 2023.

d) Other (Provide website address or link to appropriate information):

3

1.Submitted 2022 annual report of CSF Research Achievements of OIE/NCSFRL at IVDC to the Animal Husbandry and Veterinary Bureau of the Ministry of Agriculture and Rural Affairs of China(MARA).

2.Submitted 2022 annual surveillance report of CSF in key areas in China to the Animal Husbandry and Veterinary Bureau of MARA.

3.Swine Diseases Illustrated Handbook. Co-editor: Qin Wang. China Agriculture Press. Beijing, China. July, 2023.

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAH Members?

Yes

a) Technical visit : 0

b) Seminars : 3

c) Hands-on training courses: 1

d) Internships (>1 month) 0

Type of technical training provided (a, b, c or d)	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
B	BANGLADESH	4
B	CAMBODIA	4
B	KAZAKHSTAN	3
B	PHILIPPINES	3
B	SEYCHELLES	3
B	UZBEKISTAN	12
B	LAOS	9
B	MALAYSIA	9
B	SRI LANKA	9
B	CHINA (PEOPLE'S REP. OF)	500
C	CHINA (PEOPLE'S REP. OF)	60

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ABSL-3 CNAS certificates-2027	jpg	ABSL-3 CNAS certificates-2027.jpg
ISO17025 certificates-2030	jpg	ISO17025 certificates-2030.jpg

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Sampling, storage and transportation of CSFV samples CNAS	CNAS
Handling CSFV tissue samples	CNAS
CSF viral RNA extraction	CNAS
Isolation of CSFV in cell culture	CNAS
CSFV TCID50 test	CNAS
Fluorescent antibody test for CSFV antigen detection	CNAS
Immunoperoxidase test for CSFV antigen detection	CNAS
Reverse-transcription nest polymerase chain reaction (CSFV)	CNAS
Reverse-transcription quantitative polymerase chain reaction (CSFV)	CNAS
Indirect ELISA Kit to Detect Antibody against Classical Swine Fever	CNAS
Blocking ELISA Kit to Detect the Antibody against Classical Swine Fever Virus	CNAS
Antibody virus neutralization test (rabbit)	CNAS

Florescent antibody virus neutralization test	CNAS
ASFV virus isolation viral isolation in porcine leukocytes and hemadsorption	CNAS

20. Does your laboratory maintain a “biorisk management system” for the pathogen and the disease concerned?

Yes

We have biosafety and biosecurity risk management systems which are in compliance with Chinese and international regulations and continually reviewed and improved through application. In addition, we have established Risk Assessment Report for Classical Swine Fever and Risk Assessment Report for African Swine Fever, which are also reviewed and updated regularly.

TOR9: SCIENTIFIC MEETINGS

21. Did your laboratory organise scientific meetings related to the pathogen in question on behalf of WOAH?

Yes

NATIONAL/ INTERNATIONAL	TITLE OF EVENT	CO-ORGANISER	DATE (MM/YY)	LOCATION	NO. PARTICIPANTS
International	International Symposium on Classical Swine Fever and Other Important Swine Infectious Diseases	Huazhong Agricultural University	2023-11-27	Wuhan, China	500

22. Did your laboratory participate in scientific meetings related to the pathogen in question on behalf of WOAH?

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
The 11th Leman China Swine Conference,,Changsha, China,March 22-24th, 2023	2023-03-22	Changsha, China	Speaker	Eradication Strategy for CSFV(Qin Wang)
The 4th Annual Veterinary Diagostic Conference, China, March 29-31th, 2023	2023-03-29	Chongqing, China	Speaker	Current status of CSFV Epidemics and Research Progress on New Diagnostic Technology(Qin Wang)
International Symposium on Classical Swine Fever and Other Important Swine Infectious Diseases,Wuhan, China,Nov 27-29,2023	2023-11-27	Wuhan, China	Speaker	Research Progress on New diagnostic technologies for Classical Swine Fever(Qin Wang) Epidemiology, prevention and control of Classical swine fever in China. (Yebing Liu). Development and application of pseudoviruses on classical swine fever and African swine fever. (Yingju Xia)
The 10th Vetrinary Congress,Nanjing, China,Arg 22-24,2023	2023-08-24	Nanjing, China	Speaker	Diagostic Technology and Eradication Strategy for CSF(Qin Wang)

TOR10: NETWORK WITH WOAH REFERENCE LABORATORIES

23. Did your laboratory exchange information with other WOAH Reference Laboratories designated for the same pathogen or disease?

Yes

24. Do you network (collaborate or share information) with other WOAH Reference Laboratories designated for the same pathogen?

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOAH REF. LABS
International Symposium on Classical Swine Fever and Other Important Swine Infectious Diseases,Wuhan, China,Nov	Conference organiser	500	CSF ref lab in Germany, Spain, Japan

27-29,2023			

25. Did you organise or participate in inter-laboratory proficiency tests with WOAH Reference Laboratories designated for the same pathogen?

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOAH REF. LABS/ ORGANISING WOAH REF. LAB.
Participant determining laboratory´s capability to conduct diagnostic tests for CSF. My lab is participating CSF inter laboratory proficiency tests 2022-2023 organised by WOAH/EU Ref Lab for CSF from TiHo Hannover Germany.	participant	1	CSF ref lab in Beijing, CHINA

26. Did your laboratory collaborate with other WOAH Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?

No

TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOAH Reference Laboratories for the same pathogen?

No

TOR12: EXPERT CONSULTANTS

28. Did your laboratory place expert consultants at the disposal of WOAH?

Yes

KIND OF CONSULTANCY	Location	SUBJECT (FACULTATIVE)
Review and advice	China	Review the chapter on classical swine fever (3.09.03) the OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals -updated vaccines and diagnostic table

29. Additional comments regarding your report:

No