

OIE Reference Laboratory Reports Activities

Activities in 2020

This report has been submitted : 2021-01-17 04:32:23

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Classical swine fever
Address of laboratory:	China Institute of Veterinary Drug Control (IVDC)/Center for Veterinary Drug Evaluation (CVDE) Department of Reference Substance Research No.8 Zhongguancun South Street Haidian District Beijing 100081 CHINA (PEOPLES REP. OF)
Tel.:	+86-010 612 55 400
Fax:	+86-10 62 10 36 70
E-mail address:	wq551@vip.sina.com
Website:	http://www.ivdc.org.cn/
Name (including Title) of Head of Laboratory (Responsible Official):	Prof. Zhao Qizu, Head of the department of Reference Standards Research of IVDC
Name (including Title and Position) of OIE Reference Expert:	Prof. Qin Wang Designated expert, OIE Reference Laboratory for Classical Swine Fever at IVDC
Which of the following defines your laboratory? Check all that apply:	Governmental

ToR 1: To use, promote and disseminate diagnostic methods validated according to OIE Standards

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 OIE Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests		Nationally	Internationally
Indirect ELISA Kit to Detect Antibody against Classical Swine Fever Virus	yes	1000	0
Blocking ELISA Kit to Detect the Antibody against Classical Swine Fever Virus	yes	1000	0
fluorescent antibody virus neutralisation test(CSFV)	yes	5	0
Direct diagnostic tests		Nationally	Internationally
Reverse-transcription quantitative polymerase chain reaction (CSFV)	yes	906	0
Reverse-transcription nest polymerase chain reaction (CSFV)	yes	4	0
Genetic Typing (CSFV phylogenetic analysis)	no	4	0
Virus isolation (CSFV)	yes	4	0
Fluorescent antibody test (CSFV)	yes	4	0

**ToR 2: To develop reference material in accordance with OIE requirements, and implement and promote the application of OIE Standards.
To store and distribute to national laboratories biological reference products and any other reagents used in the diagnosis and control of the designated pathogens or disease.**

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

Yes

NOTE: Currently, there are 22 laboratories that produce Standard Reference Reagents officially recognised by the OIE for 19 diseases/pathogens. Please click the following link to the list of OIE-approved International Standard Sera: <http://www.oie.int/en/our-scientific-expertise/veterinary-products/reference-reagents/>. If the reagent is not listed on this page, it is NOT considered OIE-approved. The next two questions allow you to indicate non-OIE-approved diagnostic reagents.

OIE-approved SRR producing laboratory – Select your lab from list:

Disease	Test	Available from
Classical swine fever	Virus neutralisation	Dr Helen Crooke Animal and Plant Health Agency, Weybridge, New Haw, Addlestone, Surrey KT15 3NB, United Kingdom Tel: (44-1932) 35.76.37 helen.crooke@apha.gov.uk

Type of reagent available	Related diagnostic test	Produced/ Supply imported	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	Name of recipient OIE Member Countries
WH303	FAVN/NPLA/FAT/IPT	Produced/ Supply	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	CHINA (PEOPLE'S REP. OF)

3. Did your laboratory supply standard reference reagents (non OIE-approved) and/or other diagnostic reagents to OIE Member Countries?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient OIE Member Countries	Region of recipients
CSFV RT-nPCR kit [24 reactions/kit]	detects viral nucleic acid of CSFV	Produced/ provide	32 kits	0	0	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
ASFV PCR kit[50 reactions/kit]	detects viral nucleic acid of ASFV	Produced/ provide	24 kits	0	0	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
ASFV real-time PCR kit[50 reactions/kit]	detects viral nucleic acid of ASFV	Produced/ provide	28 kits	0	0	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Reference materials of C-strain vaccine (rabbit kidney-derived) (10 doses/bottle)	Control for Efficacy test of C-strain vaccine	Produced/ provide	10 dose	0	0	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Reference materials of PRRSV vaccine (JXA1-R) (10 doses/bottle)	Control for Efficacy test of PRRSV vaccine	Produced/ provide	90 dose	0	0	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East

National Reference Positive Serum of C-strain vaccine for vaccine detection (1ml/Ampoule)	Control for enzyme-linked immunosorbent assay (ELISA) for vaccine antibody detection	Produced/ provide	360ml	0	0	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
National Reference materials of strong positive serum against CSFV (1ml/Ampoule)	Fluorescent antibody virus neutralisation test (FAVN)/ Neutralising peroxidase-linked assay(NPLA)/ Enzyme-linked immunosorbent assay (ELISA)for antibody detection, virus Isolation / Fluorescent antibody test(FAT)/ Immunoperoxidase test(IPT) for antigen detection	Produced/ provide	69ml	0	0	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Reference material of weak positive serum against CSFV(1ml/Ampoule)	FAVN/ NPLA/ ELISA for antibody detection, virus Isolation / FAT/ IPT for antigen detection	Produced/ provide	34ml	0	0	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Reference material of CSFV negative serum (1ml/Ampoule)	FAVN/ NPLA/ ELISA for antibody detection, virus Isolation / FAT/ IPT for antigen detection	Produced/ provide	46 ml	0	0	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Reference materials of positive Serum against PRV(1ml/Ampoule)	detection for extraneous agents of C-strain vaccine	Produced/ provide	594 ml	0	0	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East

Reference materials of positive serum against PCV II(0.5ml/Ampoule)	detection for extraneous agents of C-strain vaccine	Produced/ provide	36 ml	0	0	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
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4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to OIE Member Countries?

No

ToR 3: To develop, standardise and validate, according to OIE Standards, new procedures for diagnosis and control of the designated pathogens or diseases

6. Did your laboratory develop new diagnostic methods validated according to OIE Standards for the designated pathogen or disease?

Yes

7. Did your laboratory develop new vaccines according to OIE Standards for the designated pathogen or disease?

Yes

Name of the new test or diagnostic method or vaccine developed	Description and References (Publication, website, etc.)
ASFV Real-time RT-PCR kit	Chinese registration certificate of new veterinary drugs□under inspection test
CLIA Kit to Detect Antibody against Classical Swine Fever Virus	Chinese registration certificate of new veterinary drugs□The kit had passed the last evaluation meeting and will be approval a new certificate
Blocking ELISA Kit to Detect the Antibody against Classical Swine Fever Virus	Chinese registration certificate of new veterinary drugs□Have obtained the certificate□ http://www.ivdc.org.cn/tzgg01/gg/202011/t20201124_52363.htm □
Diagnostic Techniques for Classical Swine Fever (GB/T16551—2020)	National standards have been released by State Administration for Market Regulation and Standardization Administration (http://openstd.samr.gov.cn/bzgk/gb/index)
CSFV live vaccine(C-strain,PK/WRL cells)	Have obtained the certificate (http://www.xmsyj.moa.gov.cn/zwfw/202006/t20200610_6346285.htm);Different clinical presentations of subgenotype 2.1 strain of classical swine fever infection in weaned piglets and adults, and long-term cross-protection conferred by a C-strain vaccine□Qin Wang, Huanhuan Liu, Lu Xu, Junping Li, Huawei Wu, Chenghuai Yang, Xiaochun Chen, Yong Deng, Yanyong Sun, Changchun Tu, Ning Chen*, Wenjie Gongc*, Guanghua Chen*□Veterinary Microbiology.□Contents lists available at ScienceDirect□

ToR 4: To provide diagnostic testing facilities, and, where appropriate, scientific and technical advice on disease control measures to OIE Member Countries

8. Did your laboratory carry out diagnostic testing for other OIE Member Countries?

No

9. Did your laboratory provide expert advice in technical consultancies on the request of an OIE Member Country?

Yes

Name of the OIE Member Country receiving a technical consultancy	Purpose	How the advice was provided
PHILIPPINES	Diagnosis, Epidemiology, Molecular Characterization and Control of CSF and other Economically Important Transboundary Swine Viruses in Southern Philippines	Remote (email exchange)

ToR 5: To carry out and/or coordinate scientific and technical studies in collaboration with other laboratories, centres or organisations

10. Did your laboratory participate in international scientific studies in collaboration with OIE Member Countries other than the own?

No

ToR 6: To collect, process, analyse, publish and disseminate epizootiological data relevant to the designated pathogens or diseases

11. Did your Laboratory collect epizootiological data relevant to international disease control?

Yes

If the answer is yes, please provide details of the data collected:
The antigen and antibody surveillance of CSFV in mainland China.

12. Did your laboratory disseminate epizootiological data that had been processed and analysed?

Yes

If the answer is yes, please provide details of the data collected:
The CSF surveillance report in mainland China

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

a) Articles published in peer-reviewed journals: 6

1. Different clinical presentations of subgenotype 2.1 strain of classical swine fever infection in weaned piglets and adults, and long-term cross-protection conferred by a C-strain vaccine [Qin Wang, Huanhuan Liu, Lu Xu, Junping Li, Huawei Wu, Chenghui Yang, Xiaochun Chen, Yong Deng, Yanyong Sun, Changchun Tu, Ning Chen*, Wenjie Gongc*, Guanghua Chen*] *Veterinary Microbiology*. [Contents lists available at ScienceDirect]
2. Research Progress and Application of CRISPR/Cas9 Gene Editing Technology in Prevention and Control of Important Swine Virus Diseases. Dai XY, ZHANG Qianyi, XU Lu, ZHAO Qizu, WANG Qin, XIA Yingju. *Acta Veterinaria et Zootechnica Sinica*, 2020, 51(5): 943-951
3. Result Analysis of National Proficiency Testing Program for the Detection of Classical Swine Fever Virus Nucleic Acid [Acta Veterinaria et Zootechnica Sinica, XU Lu, ZHANG Qian-yi, XIA Ying-ju, WANG Zhen, LI Cui, ZOU Xing-qi, WANG Qin, ZHAO Qi-zu] 2020, 51(8) 1949-1955.
4. Analysis of National Proficiency Testing Program for Classical Swine Fever Virus Antibody Detection by ELISA [Acta Veterinaria et Zootechnica Sinica, XU Lu, XIA Yingju, ZHANG Qianyi, ZHANG Wenwen, WANG Zhen, LI Cui, ZOU Xingqi, ZHU Yuanyuan, XU Yuan, WANG Zhao, ZHAO Qizu, WANG Qin. 2020, 51(9): 2250-2256.
5. The Establishment of CLIA Competition ELISA Method to Detect Antibody against Classical Swine Fever Virus, *Chinese Journal of Veterinary Medicine*, XU Lu, ZHANG Qian-yi, XIA Ying-ju, REN Xue-jian, LI Cui, ZOU Xing-qi, XU Yuan, WANG Zhao, ZHAO Qi-zu, WANG Qin, Accepted.
6. Application Study of CLIA Competition ELISA Kit to Detect Antibody against Classical Swine Fever Virus, *Chinese*

Journal of Veterinary Medicine, XU Lu, ZHANG Qian-yi, XIA Ying-ju, REN Xue-jian, LI Cui, ZOU Xing-qi, XU Yuan, WANG Zhao, ZHAO Qi-zu, WANG Qin, Accepted.

b) International conferences: 5

1. The 2nd International Veterinary Testing and Diagnosis Conference, 10-12 Sep 2020, Nanjing, China
Xia Yingju(Key Speaker), Study on Evaluation Method for ASFV Test Kit
Xu Lu and Zhangqianyi, attend meeting and Discusses
2. Leman swine conference 2020. 14-16 th Oct 2020 , Chongqing, China
Wang Qin(Key Speaker.), CSF control strategy
3. Expert meeting cycle on African Swine Fever (ASF), in preparation of the recognition of zoning criteria between China and France(on line), 14-15 th January 2020, Beijing, China
Zhao Qi-Zu. Attendance and discussion
4. The FAO Regional Conference for Asia and the Pacific(on line), 1-4 th Sep 2020, Beijing, China
Zhao Qi-Zu. Attendance and discussion
5. Committee on Agriculture (COAG): Livestock, Animal and plant disease and pests,Antimicrobial resistance,COVID-19(on line), 28 th Sep-2 th Oct 2020, Beijing, China
Zhao Qi-Zu. Attendance and discussion

c) National conferences: 5

- 1.Workshop of The National "Thirteenth Five-Year" Scientific and Technical Supporting Programs (2006BAD06A18, Wang Qin): The integrated control measures of CSF, PR and PRRS (2018YFD0500801), 20-21 th,July 2020, Wang Qin, Attendance and discussion
- 2.The 5th NAU Swine Summit & The 12th Animal Husbandry and Veterinary Medicine Academic Annual Conference,14-16 th Aug 2020, Nanjing, China
Wang Qin(Key Speaker.), CSF Eradication, Our Commitment
- 3.The 9th China Animal Husbandry Science and Technology Forum, 22-24 th Oct 2020, Chongqing, China
Wang Qin(Key Speaker.), Current situation and control of CSF in China
- 4."2020 large-scale pig farm disease eradication training class" for Chongqing Animal Disease Prevention and Control Center. 27th Oct 2020, Chongqing, China
Wang Qin gave lecture of Major animal disease control strategy
- 5.2020 Veterinary Diagnostic Technology Summit Forum organized by China Veterinary Association, 19-20 th Nov 2020, Luoyang, China
Wang Qin(Key Speaker.), CSF Eradication strategy

d) Other:

(Provide website address or link to appropriate information) 8

- 1.Submitted 2020 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 2020 annual surveillance report of CSF in key areas in China to the animal husbandry and veterinary bureau of MARA.
- 3.Submitted Summary Report of 2019 International Symposium of Classical Swine Fever to Ministry of Science and Technology of China.
- 4.Submitted Information, photos and technical capabilities contents of CSF OIE/NCSFRL at IVDC to OIE Regional Representation for Asia and the Pacific(OIE RRAP),
<https://rr-asia.oie.int/en/reference-laboratories/?1828=2573&page-nb=1&1830=1944&1832=2499>RL's activity:
<https://rr-asia.oie.int/en/projects/regional-reference-centres-platform/>
- 5.Submitted the report of biosafety management of OIE/NCSFRL at IVDC to the animal husbandry and veterinary bureau of MARA according to the notice. Wang Qin attend training class and Discusses in Aug and Nov 2020 in Harbin and Hangzhou respectively, China
- 6.Submitted "The 14th Five-Year Plan" technical requirements report of "Research on Comprehensive Prevention and Control Technologies for CSF Eradication" to Science and Education Department of MARA.
- 7.Wang Qin Communicated with OIE-CSF group About CSF Review (Chapter 3.8.3)
- 8.Wang Qin received the outstanding contribution award of the Journal of Integrative Agriculture 2020.

ToR 7: To provide scientific and technical training for personnel from OIE Member

Countries**To recommend the prescribed and alternative tests or vaccines as OIE Standards**

14. Did your laboratory provide scientific and technical training to laboratory personnel from other OIE Member Countries?

Yes

- a) Technical visits: 0
- b) Seminars: 2
- c) Hands-on training courses: 0
- 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(on line)	Germany, USA, France, UK, Netherlands, Denmark, Korea, Japan, Spain, Italy, Canada, Thailand	136 attendees
b(on line)	Germany, the United States of America, Canada, Vietnam, France, Korea, Japan	51 attendees

ToR 8: To maintain a system of quality assurance, biosafety and biosecurity relevant for the pathogen and the disease concerned

15. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
ISO/IEC 17025:2005	689815812420946162.jpg
CNAS-CL05:2009	CNAS-CL052009-eng.jpg

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Sampling, storage and transportation of CSFV samples	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	CNAS
Immunoperoxidase test for CSFV	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
ASFV virus isolation in porcine alveolar macrophages and hemadsorption	CNAS
Polymerase chain reaction for ASFV	CNAS
Quantitative polymerase chain reaction for ASFV	CNAS
Genotyping of ASFV strains	CNAS

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

Yes

(See *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, Chapter 1.1.4*)

ToR 9: To organise and participate in scientific meetings on behalf of the OIE

18. Did your laboratory organise scientific meetings on behalf of the OIE?

No

19. Did your laboratory participate in scientific meetings on behalf of the OIE?

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
The 2nd International Veterinary Testing and Diagnosis Conference	09/2020	Nanjing, China	Key Speaker(Xia Yingju)	Study on Evaluation Method for ASFV Test Kit
Leman Swine Conference 2020	10/2020	Chongqing, China	Key Speaker(Wang Qin)	CSF control strategy
Expert Meeting Cycle on African Swine Fever (ASF) [on line]	01/2020	Beijing, China	short communications(Zhao Qi-Zu)	in preparation of the recognition of zoning criteria between China and France
The FAO Regional Conference for Asia and the Pacific(on line)	09/2020	Beijing, China	short communications(Zhao Qi-Zu)	ASF control in Asia and the Pacific area
Committee on Agriculture (COAG)(on line)	09-10/2020	Beijing, China	short communications(Zhao Qi-Zu)	Livestock, Animal and plant disease and pests, Antimicrobial resistance, COVID-19

ToR 10: To establish and maintain a network with other OIE Reference Laboratories designated for the same pathogen or disease and organise regular inter-laboratory proficiency testing to ensure comparability of results

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

Yes

21. Was your laboratory involved in maintaining a network with OIE Reference Laboratories designated for the same pathogen or disease by organising or participating in proficiency tests?

Yes

Purpose of the proficiency tests: ¹	Role of your Reference Laboratory (organiser/ participant)	No. participants	Participating OIE Ref. Labs/ organising OIE Ref. Lab.
Proficiency testing of all tests used for serological	Participant	47	My lab participated CSF inter-laboratory proficiency tests 2020 organised by OIE/EU Ref Lab for CSF from TiHo Hannover Germany.

¹ validation of a diagnostic protocol: specify the test; quality control of vaccines: specify the vaccine type, etc.

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

No

ToR 11: To organise inter-laboratory proficiency testing with laboratories other than OIE Reference Laboratories for the same pathogens and diseases to ensure equivalence of results

23. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than OIE Reference Laboratories for the same disease?

Yes

Note: See Interlaboratory test comparisons in: Laboratory Proficiency Testing at: <http://www.oie.int/en/our-scientific-expertise/reference-laboratories/proficiency-testing> see point 1.3

Purpose for inter-laboratory test comparisons ¹	No. participating laboratories	Region(s) of participating OIE Member Countries
Participant determining laboratory's capability to conduct diagnostic tests for CSF. My lab is participating CSF inter-laboratory proficiency tests 2020 organised by OIE/EU Ref Lab for CSF from TiHo Hannover Germany.	47	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East

ToR 12: To place expert consultants at the disposal of the OIE

24. Did your laboratory place expert consultants at the disposal of the OIE?

Yes

Kind of consultancy	Location	Subject (facultative)
Advice	China	Review the update of OIE Terrestrial Manual CSF Chapter 3.8.3

25. Additional comments regarding your report:

Biological sample transportation is under strict control due to African swine fever outbreak in east/southeast Asia countries as well as the impact of Covid-19 pandemic in 2020.

Nonetheless, in 2021 we will try to test suspicious CSF cDNA samples from OIE member countries when inquired. We will committe to provide diagnostic testing facilities, and, where appropriate, scientific and technical advice on CSF control to OIE Member Countries, cooperate and exchange information with other RL, and OIE Member Countries, exercising the responsibilities of OIE reference laboratory.