

OIE Reference Laboratory Reports Activities

Activities in 2019

This report has been submitted : 2019-12-16 02:44:14

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Porcine reproductive and respiratory syndrome
Address of laboratory:	No.17 Tiangui Street Biomedical Base Daxing District Beijing 102618 CHINA (PEOPLES REP. OF)
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Name (including Title) of Head of Laboratory (Responsible Official):	Chuanbin Wang, PhD, Director General
Name (including Title and Position) of OIE Reference Expert:	Kegong Tian
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
LSIVET SUIS PRRS A/S (LSI) (type North American)	No	632	0
Porcine reproductive and respiratory syndrome virus antibody test kit (IDEXX) (type North American)	No	4119	0
Direct diagnostic tests		Nationally	Internationally
Cell Culture (Marc-145)	Yes	132	0
Real-time RT-PCR gene Nsp2	No	4764	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?

No

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

No

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.)
diagnostic method	Establishment and Application of Universal Real-time RT-PCR Assay of Porcine Reproductive and Respiratory Syndrome Virus
PRRSV attenuated vaccine	Highly Pathogenic Porcine Reproductive and Respiratory Syndrome Purification and Thermo-stable Vaccine, live (JXA1-R Strain[Suspension culture])

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
SRI LANKA	Technical support for diagnosis of swine diseases	We will provide some diagnostic reagent or help diagnosis.

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?

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	OIE Member Countries involved other than your country
Linking Epidemiology and Laboratory Research on Transboundary Animal Diseases and Zoonoses in China, Lao and Myanmar (LinkTADS)	5 Years	LinkTADS brings together world-class research institutes and experts in cross-border cooperation with the aim to coordinate research among the Lao, Myanmar and China, thus improving scientific excellence in animal health(epidemiology and laboratory).	FAO, OIE	LAOS
Linking Epidemiology and Laboratory Research on Transboundary Animal Diseases and Zoonoses in China, Lao and Myanmar (LinkTADS)	5 Years	LinkTADS brings together world-class research institutes and experts in cross-border cooperation with the aim to coordinate research among the Lao, Myanmar and China, thus improving scientific excellence in animal health(epidemiology and laboratory).	FAO, OIE	MYANMAR

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:
China-Lao-Myanmar transboundary animal samples were collected and analysis

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 six strains were isolated and sequenced and then submit to GENBANK

**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 Yu ZQ, Yi HY, Ma J, Wei YF, Cai MK, Li Q, Qin CX, Chen YJ, Han XL, Zhong RT, Chen Y, Liang G, Deng Q, Tian K, Wang H, Zhang GH. Ginsenoside Rg1 Suppresses Type 2 PRRSV Infection via NF- κ B Signaling Pathway In Vitro, and Provides Partial Protection against HP-PRRSV in Piglet. *Viruses*. 2019, 11(11). pii: E1045. doi: 10.3390/v11111045.

2 Chang Y, Deng Y, Li T, Wang J, Wang T, Tan F, Li X, Tian K. Visual detection of porcine reproductive and respiratory syndrome virus using CRISPR-Cas13a. *Transbound Emerg Dis*. 2019, doi: 10.1111/tbed.13368.

3 Chen N, Ye M, Huang Y, Li S, Xiao Y, Li X, Li S, Li X, Yu X, Tian K, Zhu J. Identification of Two Porcine Reproductive and Respiratory Syndrome Virus Variants Sharing High Genomic Homology but with Distinct Virulence. *Viruses*. 2019, 11(9). pii: E875. doi: 10.3390/v11090875.

4 Wang H, Shen L, Chen J, Liu X, Tan T, Hu Y, Bai X, Li Y, Tian K, Li N, Hu X. Deletion of CD163 Exon 7 Confers Resistance to Highly Pathogenic Porcine Reproductive and Respiratory Viruses on Pigs. *Int J Biol Sci*. 2019, 15(9):1993-2005. doi: 10.7150/ijbs.34269.

5 Chen N, Ye M, Xiao Y, Li S, Huang Y, Li X, Tian K, Zhu J. Development of universal and quadruplex real-time RT-PCR assays for simultaneous detection and differentiation of porcine reproductive and respiratory syndrome viruses. *Transbound Emerg Dis*. 2019, 66(6):2271-2278. doi: 10.1111/tbed.13276

6 Chen J, Wang H, Bai J, Liu W, Liu X, Yu D, Feng T, Sun Z, Zhang L, Ma L, Hu Y, Zou Y, Tan T, Zhong J, Hu M, Bai X, Pan D, Xing Y, Zhao Y, Tian K, Hu X, Li N. Generation of Pigs Resistant to Highly Pathogenic Porcine Reproductive and Respiratory Syndrome Virus through Gene Editing of CD163. *Int J Biol Sci*. 2019, 15(2):481-492. doi: 10.7150/ijbs.25862.

b) International conferences: 2

2nd OIE Regional Meeting for OIE Reference Centres in Asia and the Pacific, Tokyo, Japan, 12-13 March 2019 .
OIE Regional Workshop on Swine Disease Diagnosis. Beijing, China, 30-31 October 2019.

c) National conferences: 1

Prevention and control measures against swine diseases & laboratory diagnostic techniques in Beijing, China. 2019

d) Other:

(Provide website address or link to appropriate information) 0

**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?

No

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	ISO17025 CNAS BL0088.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
ASFV/PRRSV/CSF	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?

Yes

National/ International	Title of event	Co-organiser	Date (mm/yy)	Location	No. Participants
International	OIE Regional Workshop on Swine Disease Diagnosis	OIE	10/2019	Beijing/China	China, Laos, Mongolia, Myanmar, Japan, Philippines, Thailand, Vietnam

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
2nd OIE Regional Meeting for OIE Reference Centres in Asia and the Pacific	3/2019	Tokyo/ Japan,	Speaker	The Chinese National/OIE Reference Laboratory for PRRSV
OIE Regional Workshop on Swine Disease Diagnosis	10/2019	Beijing/China	Speaker	Swine industry profile and swine disease status in China
OIE Regional Workshop on Swine Disease Diagnosis	10/2019	Beijing/China	Speaker	Rapid Diagnosis of African Swine Fever

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?

No

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?

No

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
Determining a laboratory's capability to conduct serological diagnostics for PRRS, sera from APHA SCIENTIIC(organiser)	1	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input 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?

No

25. Additional comments regarding your report:

No