OIE Reference Laboratory Reports Activities

Activities in 2021

This report has been submitted : 2022-01-11 10:27:24

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Swine streptococcosis
Address of laboratory:	Nanjing Agricultural university, NAU Branch of Swine Streptococcosis Diagnostic Laboratory (BSSDL) Weigang No.1, Nanjing Jiangsu province CHINA (PEOPLES REP. OF)
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Website:	
Name (including Title) of Head of Laboratory (Responsible Official):	Prof. Chengping Lu
Name (including Title and Position) of OIE Reference Expert:	Chengping Lu
Which of the following defines your laboratory? Check all that apply:	Academic

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	
Indirect diagnostic tests		Nationally	Internationally
No	No	0	0
Direct diagnostic tests		Nationally	Internationally
PCR detection for Streptococcus suis	Yes	1511	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?

No

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

No

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?

No

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
Genomic and pathogenic investigations of Streptococcus suis serotype 7 population derived from a human patient and pigs	from 2020.Jan to 2021 Sep	In order to deepen the understanding of S. suis serotype 7 population characteristics	Faculty of Veterinary Medicine, University of Montreal, Canada; Facultad de Veterinaria and Centro de Vigilancia Sanitaria Veterinaria (VISAVET), Universidad Complutense de Madrid, Spain; The College of Veterinary Medicine, University of Minnesota, USA	CANADA SPAIN UNITED STATES OF AMERICA

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:
We collected epizootiological data of Streptococcus suis isolated from healthy or diseased pigs.

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:
we investigated the phylogenetic structure, genomic features, and virulence of S. suis serotype 7 population, including 35 strains and 79 genomes. Significant diversities were revealed in S. suis serotype 7 population, which were clustered into 22 sequence types (STs), five minimum core genome (MCG) groups, and six lineages. Lineages 1, 3a, and 6 were mainly constituted by genomes from Asia. Genomes of Lineages 2, 3b, and 5a were mainly from Northern America. Most of genomes from Europe (41/48) were clustered into Lineage 5b. In addition to strain GX69, 13 of 21 S. suis serotype 7 representative strains were classified as virulent strains using the C57BL/6 mouse model. Virulence-associated genes preferentially present in highly pathogenic S. suis serotype 2 strains were not suitable as virulence indicators for S. suis serotype 7 strains. Integrative mobilizable elements were widespread and may play a critical role in disseminating antibiotic resistance genes of S. suis serotype 7 strains. Our study confirmed S. suis serotype 7 is a non-negligible pathotype and deepened the understanding of the population structure of S. suis serotype 7, which provided valuable information for the improved surveillance of this serotype.

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: 2
1. Pujun Liang, Mingliu Wang, Marcelo Gottschalk, Ana I. Vela, April A. Estrada, Jianping Wang, Pengcheng Du, Ming Luo, Han Zheng*, Zongfu Wu*. Genomic and pathogenic investigations of Streptococcus suis serotype 7 population derived from a human patient and pigs. Emerging Microbes & Infections, 2021, 10 (1): 1960-1974

2. Xiaoming Wang, Junjie Sun, Chen Bian, Jianping Wang, Zijing Liang, Yanling Shen, Huochun Yao, Jinhu Huang, Liping Wang*, Han Zheng*, Zongfu Wu*. The population structure, antimicrobial resistance, and pathogenicity of Streptococcus suis cps31. Veterinary Microbiology, 2021, 259: 109149

b) International conferences: 1
One Health Global Experts Symposium organized by Food and Agriculture Organization of the United Nations & Nanjing Agricultural University

c) National conferences: 0

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?

Yes

a) Technical visits: 0
b) Seminars: 0
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
the OIE RRAP in collaboration with OIE Reference Laboratory for swine streptococcosis in China P.R., organised the “OIE Regional Virtual Training on the Diagnosis, Prevention, and Control of Swine Bacterial Diseases”on 15-16 November 2021.	China	20 participants from 7 countries

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: 2017	□□□□ □□ 2019.12.27.JPG

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
PCR detection for Streptococcus suis type 2	China National Accreditation Service for Conformity Assessment

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?

No

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?

Not applicable (Only OIE Reference Lab. designated for disease)

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?

Not applicable (Only OIE Reference Lab. designated for disease)

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?

Not applicable (Only OIE Reference Lab. designated for disease)

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?

No

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

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: