

WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted : 8 mars 2023 01:42

Laboratory Information

| | |
|--|---|
| Name of disease (or topic) for which you are a designated WOA Reference Laboratory: | Porcine reproductive and respiratory syndrome reference laboratory |
| Address of laboratory: | No.17, Tiangui Street, Biomedical Base, Daxing District, Beijing, China |
| Tel.: | 010-59198918 |
| E-mail address: | tiankg@263.net; zhouzhi1@126.com |
| Website: | http://www.cadc.net.cn |
| Name (including Title) of Head of Laboratory (Responsible Official): | Zhi Zhou, Professor |
| Name (including Title and Position) of WOA Reference Expert: | Kegong Tian, Professor |
| 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 WOA Manual (Yes/No) | Total number of test performed last year | |
|---|-------------------------------------|--|-----------------|
| | | Nationally | Internationally |
| Indirect diagnostic tests | | | |
| LSIVET SUI PRS A/S (LSI) (type North American) | Yes | 4386 | 0 |
| Porcine reproductive and respiratory syndrome virus antibody test kit (IDEXX) (type North American) | Yes | 592 | 0 |
| | | | |

| Direct diagnostic tests | | Nationally | Internationally |
|-------------------------|-----|------------|-----------------|
| Cell Culture (Marc-145) | Yes | 596 | 0 |
| Real-time RT-PCR | Yes | 7885 | 0 |
| IFA | Yes | 296 | 0 |

TOR2: REFERENCE MATERIAL

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

No

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

No

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAHA 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 WOAHA Standards for the designated pathogen or disease?

Yes

| NAME OF THE NEW TEST OR DIAGNOSTIC METHOD DEVELOPED | DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.) |
|--|---|
| Universal Real-time RT-PCR assay for porcine reproductive and respiratory syndrome virus | Establishment and application of universal Real-time RT-PCR assay for porcine reproductive and respiratory syndrome virus |
| ELISA kit | Porcine reproductive and respiratory syndrome virus ELISA kit for PRRSV-1 and PRRSV-2 antibody |
| PRRSV magnetic particle chemiluminescence antibody detection kit | PRRSV magnetic particle chemiluminescence antibody detection kit for PRRSV-1 and PRRSV-2 antibody |

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

Yes

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

Yes

| NAME OF THE NEW VACCINE DEVELOPED | DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.) |
|-----------------------------------|---|
| HP-PRRSV attenuated vaccine | HP-PRRSV purification and thermo-stable vaccine, live (JXA1-R strain, suspension culture) |
| PRRSV killed vaccine | Developing PRRSV NADC30-Like vaccine |

TOR4: DIAGNOSTIC TESTING FACILITIES

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

No

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

No

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

Yes

| Title of the study | Duration | PURPOSE OF THE STUDY | PARTNERS (INSTITUTIONS) | WOAH 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, WOA | LAOS |
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TOR6: EPIZOOLOGICAL DATA

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

No

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:

2022 PRRSV sequence

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:

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Yuan L, Zhu Z, Fan J, Liu P, Li Y, Li Q, Sun Z, Yu X, Lee HS, Tian K, Li X. High Pathogenicity of a Chinese NADC34-like PRRSV on pigs. *Microbiol Spectr.* 2022 10(4):e0154122.

Qiu M, Li S, Ye M, Li J, Sun Z, Li X, Xu Y, Xiao Y, Li C, Feng B, Lin H, Zheng W, Yu X, Tian K, Zhu J, Chen N. Systemic Homologous Neutralizing Antibodies Are Inadequate for the Evaluation of Vaccine Protective Efficacy against Coinfection by High Virulent PEDV and PRRSV. *Microbiol Spectr.* 2022 10(2):e0257421

b) International conferences:

2

WOAH regional virtual training on swine diseases laboratory diagnosis. 1 -2, December, 2022

OIE Regional Proficiency Testing Provider Training. 21-25 February 2022

c) National conferences:

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The National Training on Animal disease diagnosis technology and standard material development. Beijing, China, 20-21 September, 2022.

Prevention and control measures against swine diseases & laboratory diagnostic techniques in Beijing, China. 19-20, April, 2021.

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

NO

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

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

Yes

a) Technical visit :

b) Seminars : 40

c) Hands-on training courses:

d) Internships (>1 month)

| 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 |
|---|---|---|
| WOAH regional virtual training on swine diseases laboratory diagnosis. 1 -2, December, 2022. Including :Unknown pathogen laboratory diagnosis process ; Application of Immune Detection Technology in the Diagnosis of Animal Diseases; Application of digital PCR detection technology; Virus Isolation: Determination of virus titer and neutralization antibody titer ; Application of Magnetic Particle Chemiluminescence Technology in Diagnosis and Screening of Animal Diseases; | China | 40 |

Preparation and application of standard material.

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

| Quality management system adopted | Certificate scan (PDF, JPG, PNG format) | |
|-----------------------------------|---|----------------|
| ISO/ICE 17025 | PDF | PRRSV CNAS.pdf |

19. Is your quality management system accredited?

Yes

| Test for which your laboratory is accredited | Accreditation body |
|---|--|
| Isolation and identification for PRRSV isolation, PRRSV antigen(Real-time RT-PCR) and antibody diagnosis(ELISA ,IFA,IPMA) | China National Accreditation Service for Conformity Assessment(CNAS) |

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

Yes

Reference laboratory set up biosafety committee, biosafety daily management, personnel training system, emergency Plan for Laboratory Biosafety Accidents.The laboratory virus storage room is equipped with anti-theft doors and Windows, video surveillance system and infrared anti-theft alarm system, and adopts a double-lock storage system, etc.

TOR9: SCIENTIFIC MEETINGS

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

Yes

| NATIONAL/ INTERNATIONAL | TITLE OF EVENT | CO-ORGANISER | DATE (MM/YY) | LOCATION | NO. PARTICIPANTS |
|----------------------------|--|---|--------------|---------------|------------------|
| National | The National Training on Animal disease diagnosis technology and standard material development. | No | 2022-09-20 | Beijing,China | 192 |
| National | Prevention and control measures against swine diseases & laboratory diagnostic techniques in Beijing | No | 2022-04-19 | Beijing,China | 2000 |
| | WOAH Regional virtual training on swine diseases laboratory diagnosis | WOAH Regional Representation for Asia and the Pacific | 2022-12-01 | Beijing,China | 40 |

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

Yes

| Title of event | Date (mm/yy) | Location | Role (speaker, presenting poster, short communications) | Title of the work presented |
|--|-----------------|----------|--|---|
| WOAH regional virtual training on swine diseases laboratory diagnosis. | 2022-12-01 | China | Speaker | Application of digital PCR detection technology; Virus Isolation: Determination of virus titer and neutralization antibody titer; application of Magnetic Particle Chemiluminescence Technology in Diagnosis and Screening of Animal Diseases; Preparation and application of standard material |
| OIE Regional Proficiency Testing Provider Training | 2022-02-21 | Japan | | |

TOR10: NETWORK WITH WOAHP REFERENCE LABORATORIES

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

Yes

24. Are you a member of a network of WOAHP Reference Laboratories designated for the same pathogen?

No

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

No

26. Did your laboratory collaborate with other WOAHP 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 WOAHP Reference Laboratories for the same pathogen?

No

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

No