

OIE Reference Laboratory Reports Activities

Activities in 2020

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Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Equine infectious anaemia
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Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Xiaojun Wang Professor Deputy director, State Key Laboratory of Veterinary Biotechnology Head of OIE Reference Laboratory for Equine Infectious Anemia Harbin Veterinary Research Institute The Chinese Academy of Agricultural Sciences
Name (including Title and Position) of OIE Reference Expert:	Dr. Xiaojun Wang Professor Deputy director, State Key Laboratory of Veterinary Biotechnology Head of OIE Reference Laboratory for Equine Infectious Anemia Harbin Veterinary Research Institute The Chinese Academy of Agricultural Sciences
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	
		Nationally	Internationally
Indirect diagnostic tests		Nationally	Internationally
AGID	Yes	5370	20
cELISA	Yes	5370	20
Direct diagnostic tests		Nationally	Internationally
Real time qPCR	No	78	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?

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
Anti-EIAV antibody coated plate	cELISA	NECVB company,China	96wells/plate	96wells/plate	Kazakhstan	<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
Positive Control Serum	cELISA	NECVB company,China	1ml	1ml	Kazakhstan	<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
Negative Control Serum	cELISA	NECVB company,China	1ml	1ml	Kazakhstan	<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
Ten times concentrated washing buffer	cELISA	NECVB company,China	30ml	30ml	Kazakhstan	<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
EIAV antigen conjugate	cELISA	NECVB company,China	10ml	10ml	Kazakhstan	<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

Substrate A	cELISA	NECVB company,China	6ml	6ml	Kazakhstan	<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
Substrate B	cELISA	NECVB company,China	6ml	6ml	Kazakhstan	<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
Stop Solution	cELISA	NECVB company,China	6ml	6ml	Kazakhstan	<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

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?

No

Name of the new test or diagnostic method or vaccine developed	Description and References (Publication, website, etc.)
Equine Infectious Anemia Virus cELISA Antibody Test Kit	The specific monoclonal antibodies against EIAV p26 was used for coating the plate, the recombinant protein of p26 was labelled with HRP and used as competitive antigen. Low OD450 value was obtained for positive serum, while high OD450 value was obtained for negative serum. The website for supplying this kie was: http://www.necvb.cn/product-view.php?id=123
Real time RT-PCR assay	A universal primer set and a TaqMan probe were designed and could detect almost all the EIAV strains. This study was applied for Chinese patent.
Colloidal gold test strip for detection of antibodies against Equine Infectious Anemia Virus	This strip test has been developed and currently is applying for registration.

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
KAZAKHSTAN	Assist Kazakhstan to establish standardized laboratory for the detection of equine animal diseases	Videoconferencing

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
International collaborative research on the diagnosis of Dourine between the NRCPD and HVRI OIE reference laboratories	2019-2021	Academic exchange of diagnostic technology on equine infectious diseases	Obihiro University of Agriculture and Veterinary Medicine (OUAVM)	JAPAN
Joint research on prevention and control of cross border animal diseases between China and Kazakhstan	2020-2023	To conduct joint research of epidemiology and to improve the diagnosis of equine infectious diseases, such as equine infectious anemia and equine herpes virus infection.	S. Seifullin Kazakh Agro-Technical University, Kazakhstan (KATU)	KAZAKHSTAN

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 equine disease information released by OIE and member countries.

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 analysed surveillance data from our lab and the released epizootiological data from others, and disseminate the information to people by workshop and publication.

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: 0

b) International conferences: 0

c) National conferences: 3

1. Zhe Hu, The Development of Competitive ELISA for the Detection of the Antibodies against Equine Infectious Anemia virus (EIAV), Nov. 19, 2020; Henan university workshop for research achievement transformation, Luoyang, China

2. Xiaojun Wang The Surveillance and Control Methods of Equine Infectious Anemia, conference on equine diseases and zoonosis, Sep 21-23, 2020. Chongqing, China

3. Diqui Liu, The Strategies and measures for preventing equine infectious diseases and biosecurity of stud-farm, Altay Horse and Modern horse industry development summit forum, Oct 12-14, 2020. Altay, Xinjiang, China

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	CNAS-2023-English.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
AGID	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?

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?

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
Proficiency testing for veterinary laboratories	28	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input 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)
Review of OIE standards	Changsha, China	Review of CHAPTER 12.6, Chapter 12.2, CHAPTER 12.7 of the Terrestrial Manual

25. Additional comments regarding your report:

1. Due to the COVID-19 pandemic, the planned training program to S. Saken Seifullin Kazakh Agrotechnical University, Kazakhstan (KATU) was cancelled.

2. In 2020, we published 2 papers in the basic research re EIAV replication and vaccinology. They are :

- a) Ren H, Yin X, Su C, Guo M, Wang XF, Na L, Lin Y, Wang X*. Equine lentivirus counteracts SAMHD1 restriction by Rev-mediated degradation of SAMHD1 via the BECN1-dependent lysosomal pathway. Autophagy. 2020 Nov 10. doi: 10.1080/15548627.2020.1846301. PMID: 33172327.
- b) Lin Y, Wang XF, Wang Y, Du C, Ren H, Liu C, Zhu D, Chen J, Na L, Liu D, Yang Z, Wang X*. Env diversity-dependent protection of the attenuated equine infectious anaemia virus vaccine. Emerg Microbes Infect. 2020 9(1):1309-1320. doi: 10.1080/22221751.2020.1773323. PMID: 32525460