

WOAH Reference Laboratory Reports Activities 2024

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LABORATORY INFORMATION

*Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	Japanese encephalitis
*Address of laboratory:	177 Hyeoksin 8-ro Gimcheon-si Gyeongsangbuk-do 39660
*Tel:	+82 54 912.0785
*E-mail address:	yangdk@korea.kr
Website:	
*Name (including Title) of Head of Laboratory (Responsible Official):	Jung-hee Kim (Commissioner of Animal and Plant Quarantine Agency: APQA)
*Name (including Title and Position) of WOAH Reference Expert:	Dong-Kun Yang (Senor scientist of Animal and Plant Quarantine Agency: APQA)
*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 WOAH Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
VN test (Virus neutralization test)	Yes	1364	0
Direct diagnostic tests		Nationally	Internationally
	No	0	0

TOR2: REFERENCE MATERIAL

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

No

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

No

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAHP Members?

No

TOR3: NEW PROCEDURES

6. Did your laboratory develop new diagnostic methods for the designated pathogen or disease?

Yes

Name of the new test or diagnostic method developed	Description and References (Publication, website, etc.)
Blocking ELISA for detection of JEV antibodies	Development of a blocking ELISA for detection of Japanese encephalitis virus antibodies in pig and horse sera (Korean J Vet Res. 2024;64,e25)
Multiplex RT-PCR assay for the differentiation of three genotypes of JEV	Establishment of a Multiplex RT-PCR assay for the differentiation of three genotypes of Japanese encephalitis virus (J Prev Vet Med, 2024 48(4 211-218.

7. Did your laboratory validate diagnostic methods according to WOAHP Standards for the designated pathogen or disease?

No

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

Yes

Name of the new vaccine developed	Description and References (Publication, website, etc.)
Japanese encephalitis virus genotype 1 and Getavirus combined inactivated vaccine	Composition for vaccinating Japanese encephalitis virus and Getavirus infection disease and uses thereof (Patent No. 10-2024-0142455(2024.10.17)

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

No

TOR4: DIAGNOSTIC TESTING FACILITIES

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

No

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

Yes

Name of the WOAHP Member Country receiving a technical consultancy	Purpose	How the advice was provided
INDIA	Technical inquiries related to the in-house development of a JEV ELISA	E-mail

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TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

No

13. In exercising your activities, have you identified any regulatory research needs* relevant for WOAH?

No

TOR6: EPIZOOLOGICAL DATA

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

Yes

If the answer is yes, please provide details of the data collected:

We conducted VN test on 1364 horse's sera collected from 17 cities.

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:

Seroprevalence data collected from cattle, pigs, dogs and cats were released at national conference (Poster, Korean Society of Vet Sci, Oct 17-19, 2024)

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:

2

Development of a blocking ELISA for detection of Japanese encephalitis virus antibodies in pig and horse sera (Korean J Vet Res, 2024, 64, e26.

Establishment of a Multiplex RT-PCR assay for the differentiation of three genotypes of JEV (J Prev Vet Med, 2024 48(4), 211-218.

b) International conferences:

1

WOAH regional workshop on Vector borne disease in Asia and the Pacific, Tokyo, Japan, 19-20 September 2024 (Speaker, Title: Distributin, surveillance and diagnosis of JEV in animals)

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c) National conferences:

3

Sero-surveillance of Japanese encephalitis virus in cattle, pig, dog and cat serum samples using blocking ELISA (Poster, Korean Society of Veterinary Science, 25, April, 2024)

Japanese encephalitis virus propagated in LFBK cells expressing integrin reveals hemagglutinin activity (Poster, Korean Society of Veterinary Science, 17-19 October, 2024.

Brifing of Japanese encephalitis and getah virus combined inactivated vaccine development (APQA, 7, November, 2024)

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

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 : 0

b) Seminars : 0

c) Hands-on training courses: 12

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
C	MALAYSIA	2
C	KAZAKHSTAN	2
C	MONGOLIA	2
C	PHILIPPINES	2
C	SINGAPORE	2
C	SRI LANKA	1
C	THAILAND	1

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO/IEC 17025:2017	PDF	(영문 인정서)KT372_Animal_and_Plant_Quarantine_Agency_PM_Eng_20241121.pdf

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19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
VN test	KOLAS
HI test	KOLAS

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

Yes

In accordance with KOLAS, the biorisk was managed by APQA

TOR9: SCIENTIFIC MEETINGS

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

No

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

Yes

Title of event	Date	location	Role (speaker, presenting poster, short communications)	Title of the work presented
WOAH Regional Workshop of Vector borne disease in Asia and the Pacific	2024-08-18	Tokyo	Speaker	Distribution, surveillance and diagnosis of JEV in animals
ad Hoc group meeting on the revision of the Terrestrial Code Chapter 8.19 JEV	2024-11-18	Paris	Participant	Writing draft of Chapter 8.10

TOR10: NETWORK WITH WOA REFERENCE LABORATORIES

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

No

24. Do you network (collaborate or share information) with other WOA Reference Laboratories designated for the same pathogen?

Not applicable (only WOA Reference Laboratory designated for the disease)

25. Did you organise or participate in inter-laboratory proficiency tests with WOA Reference Laboratories designated for the same pathogen during the past 2 years?

Not applicable (Only WOA Reference Laboratory designated for the disease)

Only WOA Reference Laboratory designated for JE

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

Not applicable (only WOA Reference Laboratory designated for the disease)

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 during the past 2 years?

No

Only WOAHP reference lab for JE

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

Yes

JE is known to be endemic in Republic of Korea (ROK), and although it has been continuously diagnosed in Korean, there have no JE cases confirmed in domestic animals including pigs, and horses since 2008. There was also no JE case in pigs in 2014. So, the antigen diagnosis selection was marked as negative. When it comes to JEV vaccine, five biologic companies in ROK have produced attenuated JEV vaccines and supplied them to pig farms. Additionally my lab has been conducting research project titled as "development of JEV and Getah combined vaccine for animals" between 2022 and 2024. A new inactivated JEV and Getah combined vaccine for animals was submitted for patent.