

WOAH Reference Laboratory Reports Activities 2025

This report has been submitted: 14 janvier 2026 07:07

LABORATORY INFORMATION

| | |
|---|---|
| *Name of disease (or topic) for which you are a designated WOAHO Reference Laboratory: | Japanese encephalitis |
| *Address of laboratory: | 177 Hyeoksin 8-ro Gimcheong-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): | Dong-Kun Yang (Senor scientist of Animal and Plant Quarantine Agency: APQA) |
| *Name (including Title and Position) of WOAHO 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 WOAHO Manual (Yes/No) | Total number of test performed last year | |
|-------------------------------------|------------------------------------|--|-----------------|
| | | Nationally | Internationally |
| Indirect diagnostic tests | | | |
| VN test (Virus neutralization test) | Yes | 1998 | 0 |
| Direct diagnostic tests | | | |
| | No | | |

TOR2: REFERENCE MATERIAL

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

No

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

No

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAHO Members?

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.) |
|---|--|
| HI test for JEV genotypes 5 | Concentrated JEV genotype 5 antigen to measure hemagglutination inhibition antibody titer (patent no. 10-2025-0050158; 2025.4.17.) |

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

No

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

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

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 WOAHA Member?

Yes

| Name of the WOAHA Member Country receiving a technical consultancy | Purpose | How the advice was provided |
|--|--|-----------------------------|
| MONGOLIA | Monitoring JEV in mosquitoes and animals | Technical visit |

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

No

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

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:

To control Japanese Encephalitis, the seroprevalence of horses was carried out every year in South Korea. In 2025, we conducted VN test on 1998 horses' sera collected from 17 cities. Considered that most domestic horses housed for racing were regularly immunized with JEV vaccine, the overall positive rate (88.8%, 1175 of 1998) was likely to be affected by vaccination.

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:

Sero epidemiological study of JEV in multiple animal species in the Republic of Korea (Poster, Korean Society of Zoonosis, Nov. 28, 2025)

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:

1

Development of a novel antigen for hemagglutination inhibition of Japanese encephalitis virus genotypes 5

b) International conferences:

c) National conferences:

3

- 1) Development of a novel hemagglutination antigen for JEV genotype 5 (poster, Korean Association of Basic medical scientist, July 3 2025)
- 2) Establishment of an animal-free antigen production method for the hemagglutination inhibition test of JEV (poster, Korean Society of Zoonosis, Nov. 28 2025)
- 3) Sero epidemiological study of JEV in multiple animal species in the Republic of Korea (poster, Korean society of Zoonosis, Nov. 28 2025)

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 Members?

Yes

a) Technical visit : 0

b) Seminars : 0

c) Hands-on training courses: 10

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 | SINGAPORE | 2 |
| C | LAOS | 2 |
| C | MYANMAR | 1 |
| C | THAILAND | 2 |
| C | MALAYSIA | 1 |
| C | SRI LANKA | 2 |

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 | KT372_Animal_and_Plant_Quarantine_Agency_PM_Eng_20241121.pdf |

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 WOAHP?

No

TOR10: NETWORK WITH WOAHP REFERENCE LABORATORIES

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

No

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

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

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

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

Only WOAHP Reference Laboratory designated for JE

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?

Not applicable (only WOAHP 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 humans, there have been no JE cases diagnosed in domestic animals including pigs and horses since 2008. There has been no JE case in the aborted fetus test. So, the antigen diagnosis section 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 a research project titled "Improvement of the enzyme-linked immunosorbent assay (ELISA) for detection JEV antibodies" between 2019-2022 with company. My lab transferred its blocking ELISA technology to a company. The company received approval from the Korean government for a blocking ELISA kit that measured JEV antibodies in pig and horse serum and commercialized it 2025.