World Organisation for Animal Health

Hiroshi Bannai - -

WOAH Reference Laboratory Reports Activities 2025

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LABORATORY INFORMATION

***Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:**	Equine rhinopneumonitis
***Address of laboratory:**	Equine Research Institute, Japan Racing Association, 1400-4 Shiba, Shimotsuke, Tochigi 329-0412, Japan
***Tel:**	+81285440090
***E-mail address:**	bannai@equinst.go.jp
Website:	https://japanracing.jp/en/about/jra_organization/jeri.html
***Name (including Title) of Head of Laboratory (Responsible Official):**	Toshiyuki Takahashi, DVM, PhD, Director
***Name (including Title and Position) of WOAH Reference Expert:**	Hiroshi Bannai, DVM, PhD
***Which of the following defines your laboratory? Check all that apply:**	Horse racing authority

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
Complement fixation	Yes	196	0
ELISA	Yes	215	0
Direct diagnostic tests		Nationally	Internationally
Conventional PCR	Yes	28	0
LAMP-FLP	No	16	0

TOR2: REFERENCE MATERIAL

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

No

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

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient WOAH Member Countries	Country of recipients
EHV-1 LAMP-FLP						

reagent	LAMP-FLP	provide	22.8 ml	0	1	JAPAN,

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAH Members?

TOR3: NEW PROCEDURES

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

No

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

Yes

Name of the new test or diagnostic method developed	Description and References (Publication, website, etc.)
Real-time PCR	We compared diagnostic performance of three primer-probe sets described in the Terrestrial Manual, and the result was published as follows: Kambayashi Y, Bannai H, Nemoto M, Kawanishi N, Niwa H, Tsujimura K. Comparative analysis of 3 qPCR primer-probe sets for the detection of equid alphaherpesvirus 1. J Vet Diagn Invest. 2026 Jan;38:77-83. Epub 2025 Oct 7.

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

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

TOR4: DIAGNOSTIC TESTING FACILITIES

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

No

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

Yes

Name of the WOAH Member Country receiving a technical consultancy	Purpose	How the advice was provided
HONG KONG	Advice on virus-neutralization test	E-mail

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOAH 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
Evaluation of antiviral compound against EHV-1 in in vitro model	2025	To evaluate antiviral effect against EHV-1 of an anti-herpesvirus drug used in human medicine	LABEO Frank-Duncombe	FRANCE

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 assessed prevalence of respiratory form EHV-1 and EHV-4 infections among racehorses in Japan. Also, we identified ORF30 genotypes of EHV-1 isolates from neurological cases and aborted fetuses in Japan. We collected descriptive epidemiological data of neurological form cases.

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:
We shared epidemiological data on neurological outbreak at the International Movement of Horses Committee of International Federation of Horseracing Authorities.

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:

3

1. Bannai H, Kambayashi Y, Kume K, Takebe N, Endo Y, Kawanishi N, Nemoto M, Tsujimura K. Reduction in endemic equine herpesvirus type-1 and type-4 infection among Thoroughbred yearlings through an updated vaccination program. J Equine Sci. 2025. 36:67-74.
2. Tsujimura K, Bannai H, Kambayashi Y, Nemoto M, Ohta M. Detection of equid alphaherpesvirus 1 in serum samples collected from infected horses. J Vet Diagn Invest. 2025. 37:495-498.
3. Kambayashi Y, Bannai H, Nemoto M, Kawanishi N, Niwa H, Tsujimura K. Comparative analysis of 3 qPCR primer-probe sets for the detection of equid alphaherpesvirus 1. J Vet Diagn Invest. 2026. 38:77-83.

b) International conferences:

0

c) National conferences:

4

1. Bannai H. Surveillance on equine viral diseases. The 53rd Symposium on Equine Diseases in Breeding Area. Jul 2025.
2. Bannai H, Kambayashi Y, Kawanishi N, Nemoto M, Tsujimura K. Early immune response in horses infected with equine herpesvirus type 1 (EHV-1) and those received EHV-1 vaccination. The 168th Japanese Society for Veterinary Medical Science. Sep 2025.
3. Ohkawara A, Yoshida M, Fujii S, Kawanishi N, Bannai H, Tsujimura K, Fujita T, Fukushiro K, Sano Y. An outbreak of neurological form equine rhinopneumonitis among 2-years-old Throughbred horses. The 168th Japanese Society for Veterinary Medical Science. Sep 2025.
4. Kurihara M, Fujita T, Tsubakishita Y, Ogawa A, Ohkawara A, Yoshida M, Fujii S, Bannai H, Kawanishi N, Tsujimura K. Two cases of equine herpesviral myeloencephalopathy in 2-years-old Thoroughbred horses. The 38th Japanese Society for Equine Science. Dec 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 WOAH Members?

Yes

a) Technical visit : 1

b) Seminars : 1

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
A	FRANCE	2

B	JAPAN	19
C	KOREA (REP. OF)	1

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO17025	PDF	L24-737.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Conventional RT-PCR for equine rhinopneumonitis	Perry Johnson Laboratory Accreditation (PJLA)

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

Yes

We have specific laboratories with restricted access. Experiments have been performed, and viruses have been stored at specific laboratories with safety cabinets and autoclaves. The application related to biorisk management was approved by Japanese MAFF to use EHV-1 virus for our research.

TOR9: SCIENTIFIC MEETINGS

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

No

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

Yes

Title of event	Date	location	Role (speaker, presenting poster, short communications)	Title of the work presented
The 29th International Movement of Horses Committee (IMHC) Meeting	2025-12-12	Hong Kong	Speaker	The first WOAH reference laboratory for equine rhinopneumonitis in Asia

TOR10: NETWORK WITH WOAH REFERENCE LABORATORIES

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

Yes

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

No

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

Yes

Purpose of the proficiency test:	Role of your Reference Laboratory (organiser/ participant)	No. participating Laboratories	Participating WOAH Ref. Labs/ organising WOAH Ref Lab
Assessing competency for complement-fixation test and virus-neutralization test	Participant	2	Irish Equine Centre

26. Did your laboratory collaborate with other WOAH 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 WOAH Reference Laboratories for the same pathogen during the past 2 years?

Yes

Purpose for inter-laboratory test comparisons1	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAH Member Countries
Assessing competency for conventional RT-PCR	Organizer	2	Conventional RT-PCR	JAPAN,

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

No