

OIE Reference Laboratory Reports Activities

Activities in 2021

This report has been submitted : 2022-01-13 12:01:36

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Avian influenza
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Website:	
Name (including Title) of Head of Laboratory (Responsible Official):	Prof. Yoshihiro Sakoda
Name (including Title and Position) of OIE Reference Expert:	Prof. Yoshihiro Sakoda
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			
HI test H5	Yes	50	0
HI test H7	Yes	50	0
Direct diagnostic tests			
Virus isolation	Yes	560	0
RT-qPCR	Yes	20	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?

No

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?

No

7. Did your laboratory develop new vaccines according to OIE Standards for the designated pathogen or disease?

No

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
CONGO (DEM. REP. OF THE)	Improvement of diagnosis of avian influenza	In loco and remote assistance
MONGOLIA	Improvement of diagnosis of avian influenza	In loco and remote assistance
VIETNAM	Improvement of diagnosis of avian influenza	In loco and remote assistance

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
Surveillance of avian influenza	21 years	Monitoring of avian influenza	State Central Veterinary Laboratory	CONGO (DEM. REP. OF THE)
Surveillance of avian influenza	13 years	Monitoring of avian influenza	Department of Animal Health	VIETNAM
Surveillance of avian influenza	5 years	Monitoring of avian influenza	Central Veterinary Laboratory	MONGOLIA

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:
Knowledge, attitude, and practice (KAP) analysis of avian influenza epidemic in Vietnam

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:
Knowledge, attitude, and practice (KAP) analysis of avian influenza epidemic in Vietnam

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: 7

1. Yamaya M, Shimotai Y, Ohkawara A, Bazarragchaa E, Okamatsu M, Sakoda Y, Kida H, Nishimura H. 2021. The clinically used serine protease inhibitor nafamostat reduces influenza virus replication and cytokine production in human airway epithelial cells and viral replication in mice. *J Med Virol* 93:3484-3495.
2. Suzuki S, Nguyen CT, Ogata-Nakahara A, Shibata A, Osaka H, Ishigaki H, Okamatsu M, Sakoda Y, Kida H, Ogasawara K, Itoh Y. 2021. Efficacy of a Cap-Dependent Endonuclease Inhibitor and Neuraminidase Inhibitors against H7N9 Highly Pathogenic Avian Influenza Virus Causing Severe Viral Pneumonia in Cynomolgus Macaques. *Antimicrob Agents Chemother* 65.
3. Soda K, Tomioka Y, Usui T, Uno Y, Nagai Y, Ito H, Hiono T, Tamura T, Okamatsu M, Kajihara M, Nao N, Sakoda Y, Takada A, Ito T. 2021. Susceptibility of herons (family: Ardeidae) to clade 2.3.2.1 H5N1 subtype high pathogenicity avian influenza virus. *Avian Pathol* doi:10.1080/03079457.2021.2022599:1-22.
4. Saito M, Itoh Y, Yasui F, Munakata T, Yamane D, Ozawa M, Ito R, Katoh T, Ishigaki H, Nakayama M, Shichinohe S, Yamaji K, Yamamoto N, Ikejiri A, Honda T, Sanada T, Sakoda Y, Kida H, Le TQM, Kawaoka Y, Ogasawara K,

- Tsukiyama-Kohara K, Suga H, Kohara M. 2021. Macrocyclic peptides exhibit antiviral effects against influenza virus HA and prevent pneumonia in animal models. *Nat Commun* 12:2654.
5. Nomura N, Matsuno K, Shingai M, Ohno M, Sekiya T, Omori R, Sakoda Y, Webster RG, Kida H. 2021. Updating the influenza virus library at Hokkaido University -It's potential for the use of pandemic vaccine strain candidates and diagnosis. *Virology* 557:55-61.
6. Le KT, Stevenson MA, Isoda N, Nguyen LT, Chu DH, Nguyen TN, Nguyen LV, Tien TN, Le TT, Matsuno K, Okamatsu M, Sakoda Y. 2021. A systematic approach to illuminate a new hot spot of avian influenza virus circulation in South Vietnam, 2016-2017. *Transbound Emerg Dis* doi:10.1111/tbed.14380.
7. Bazarragchaa E, Hiono T, Isoda N, Hayashi H, Okamatsu M, Sakoda Y. 2021. Establishment of a mouse- and egg-adapted strain for the evaluation of vaccine potency against H3N2 variant influenza virus in mice. *J Vet Med Sci* 83:1694-1701.

b) International conferences: 2

1. Yoshihiro Sakoda, HPAI in wild birds -situational update from Asia
August 2, 2021 2021 Webinar series: Highly pathogenic avian influenza and wild birds[]SGS Alaska Science Center, USA Webinar[]
2. Yoshihiro Sakoda, Evaluation of baloxavir marboxil and peramivir for the treatment of high pathogenicity avian influenza in birds
September 22, 2021 14th Asian Society of Conservation Medicine / 27th Japanese Society of Zoo and Wildlife Medicine 2021 Joint Conference[]Hokkaido, Japan[]

c) National conferences: 3

1. Yoshihiro Sakoda, Present status and future challenge for highly pathogenic avian influenza. Nagano Prefecture (Online seminar, May 14, 2021)
2. Yoshihiro Sakoda, Present status and future issues of highly pathogenic avian influenza. Mie Prefecture (Online seminar, Oct 21, 2021)
3. Yoshihiro Sakoda, Present status and countermeasure against highly pathogenic avian influenza. Gifu Prefecture (Online seminar, Oct 22, 2020)

d) Other:

- (Provide website address or link to appropriate information) 1
<https://virusdb.czc.hokudai.ac.jp/>

**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 17025:2017	□2020□ISO Certification_e.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Hemagglutination test and hemagglutination inhibition test	ISO/IEC 17025:2017

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?

Yes

National/ International	Title of event	Co-organiser	Date (mm/yy)	Location	No. Participants
International	GFTADs Regional Workshop for diseases of poultry in Asia and the Pacific Region	OIE Tokyo office	9/2021	Virtual	80

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?

Yes

Purpose of the proficiency tests: ¹	Role of your Reference Laboratory (organiser/ participant)	No. participants	Participating OIE Ref. Labs/ organising OIE Ref. Lab.
Molecular diagnosis of avian influenza	participant	15	not available

¹ validation of a diagnostic protocol: specify the test; quality control of vaccines: specify the vaccine type, etc.

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?

Yes

Title of the project or contract	Scope	Name(s) of relevant OIE Reference Laboratories
Genetic and antigenic characterization of recent H9 low pathogenicity avian influenza viruses	To characterize isolated viruses and publish this data to the international journal	Istituto Zooprofilattico Sperimentale delle Venezie Research and Innovation Dept., Italy
Early detection of transboundary avian influenza viruses isolated from wild migratory birds	Early warning of transboundary avian influenza viruses in far-east Asia	Animal and Plant Quarantine Agency Ministry of Agriculture, Forest and Rural Affairs KOREA(REP. OF)

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
Quality control of the diagnosis skills of HI test for ISO/IEC 17025:2017	2	<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?

No

25. Additional comments regarding your report:

COVID-19 was still a big issue for the activities of OIE ref. laboratory