OIE Reference Laboratory Reports Activities

Activities in 2016

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Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Highly and low pathogenic avian influenza
Address of laboratory:	North 20, West 10 Kita-Ku Sapporo 001-0020 JAPAN
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Website:	
Name (including Title) of Head of Laboratory (Responsible Official):	Hiroshi Kida, Professor Yoshihiro Sakoda, Professor
Name (including Title and Position) of OIE Reference Expert:	Hiroshi Kida, Professor
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	
Indirect diagnostic tests		Nationally	Internationally
HI test H5	Yes	30	400
HI test H7	Yes	30	400
Direct diagnostic tests		Nationally	Internationally
Virus isolation	Yes	800	2000

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
CHINESE TAIPEI	Improvement of diagnosis of avian influenza	In loco and remote assistance
MONGOLIA	Improvement of diagnosis of avian influenza	In loco and remote assistance
VIETNAM	Evaluation of correlation between real-time PCR and virus isolation	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 in Mongolia	16 years	Monitoring of avian influenza	State Central Veterinary Laboratory	MONGOLIA
Surveillance of avian influenza in Vietnam	8 years	Monitoring of avian influenza	Department of Animal Health	VIETNAM

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

12. Did your laboratory disseminate epizootiological data that had been processed and analysed?

Yes

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: 15

1. Chu DH, Okamatsu M, Matsuno K, Hiono T, Ogasawara K, Nguyen LT, Van Nguyen L, Nguyen TN, Nguyen TT, Van Pham D, Nguyen DH, Nguyen TD, To TL, Van Nguyen H, Kida H, Sakoda Y. 2016. Genetic and antigenic characterization of H5, H6 and H9 avian influenza viruses circulating in live bird markets with intervention in the center part of Vietnam. Vet Microbiol 192:194-203
2. Chu DH, Stevenson MA, Van Nguyen L, Isoda N, Firestone SM, Nguyen TN, Nguyen LT, Matsuno K, Okamatsu M, Kida H, Sakoda Y. 2016. A cross-sectional study to quantify the prevalence of avian influenza virus in poultry at intervention and non-intervention live bird markets in central Vietnam, 2014 Transbound Emerg Dis. in press
3. Gamoh, K., M. Nakamizo, M. Okamatsu, Y. Sakoda, H. Kida, and S. Suzuki. 2016. Protective efficacy of stockpiled vaccine against H5N8 highly pathogenic avian influenza virus isolated from a chicken in Kumamoto prefecture, Japan, in 2014. J Vet Med Sci 78:139-142.
4. Hiono, T., M. Okamatsu, M. Igarashi, R. McBride, R. P. de Vries, W. Peng, J. C. Paulson, Y. Sakoda, and H. Kida. 2016. Amino acid residues at positions 222 and 227 of the hemagglutinin together with the neuraminidase determine binding of H5 avian influenza viruses to sialyl Lewis X. Arch Virol 161:307-316.
5. Hiono, T., M. Okamatsu, N. Yamamoto, K. Ogasawara, M. Endo, S. Kuribayashi, S. Shichinohe, Y. Motohashi, D. H. Chu, M. Suzuki, T. Ichikawa, T. Nishi, Y. Abe, K. Matsuno, K. Tanaka, T. Tanigawa, H. Kida, and Y. Sakoda. 2016. Experimental infection of highly and low pathogenic avian influenza viruses to chickens, ducks, tree sparrows, jungle crows, and black rats for the evaluation of their roles in virus transmission. Vet Microbiol 182:108-115.
6. Horimoto, T., T. Hiono, H. Mekata, T. Odagiri, Z. Lei, T. Kobayashi, J. Norimine, Y. Inoshima, H. Hikono, K. Murakami, R. Sato, H. Murakami, M. Sakaguchi, K. Ishii, T. Ando, K. Otomaru, M. Ozawa, Y. Sakoda, and S. Murakami. 2016. Nationwide Distribution of Bovine Influenza D Virus Infection in Japan. Plos One 11:e0163828.
7. Kobayashi M, Kodama M, Noshi T, Yoshida R, Kanazu T, Nomura N, Soda K, Isoda N, Okamatsu M, Sakoda Y, Yamano Y, Sato A, Kida H. 2016. Therapeutic efficacy of peramivir against H5N1 highly pathogenic avian influenza viruses harboring the neuraminidase H275Y mutation. Antiviral Res 139: 41-48
8. Nakayama, M., H. Ozaki, Y. Itoh, K. Soda, H. Ishigaki, M. Okamatsu, Y. Sakoda, C. H. Park, H. Tsuchiya, H. Kida, and K. Ogasawara. 2016. Vaccination against H9N2 avian influenza virus reduces bronchus-associated lymphoid tissue formation in cynomolgus macaques after intranasal virus challenge infection. Pathology international 66:678-686.
9. Okamatsu, M., T. Hiono, H. Kida, and Y. Sakoda. 2016. Recent developments in the diagnosis of avian influenza.

Veterinary journal 215:82-86.
10. Okamatsu, M., Y. Motohashi, T. Hiono, T. Tamura, K. Nagaya, K. Matsuno, Y. Sakoda, and H. Kida. 2016. Is the optimal pH for membrane fusion in host cells by avian influenza viruses related to host range and pathogenicity? Arch Virol 161:2235-2242.
11. Shichinohe, S., Y. Itoh, M. Nakayama, H. Ozaki, K. Soda, H. Ishigaki, M. Okamatsu, Y. Sakoda, H. Kida, and K. Ogasawara. 2016. Comparison of pathogenicities of H7 avian influenza viruses via intranasal and conjunctival inoculation in cynomolgus macaques. Virology 493:31-38.
12. Takaki H, Sato H, Kurata R, Hikono H, Hiono T, Kida H, Matsumoto M, Saito T, Seya T. 2016. Cytokine responses to eye spray adjuvants for enhancing vaccine-induced immunity in chickens. Microbiol Immunol 60 :511-515
13. Yamada, H., S. Nagase, K. Takahashi, Y. Sakoda, H. Kida, and S. Okamoto. 2016. Toll-like receptor 9 ligand D-type oligodeoxynucleotide D35 as a broad inhibitor for influenza A virus replication that is associated with suppression of neuraminidase activity. Antiviral research 129:81-92.
14. Yasui, F., Y. Itoh, A. Ikejiri, M. Kitabatake, N. Sakaguchi, K. Munekata, S. Shichinohe, Y. Hayashi, H. Ishigaki, M. Nakayama, Y. Sakoda, H. Kida, K. Ogasawara, and M. Kohara. 2016. Sensitization with vaccinia virus encoding H5N1 hemagglutinin restores immune potential against H5N1 influenza virus. Scientific reports 6:37915.
15. Global Consortium for H5N8 and Related Influenza Viruses. 2016. Role for migratory wild birds in the global spread of avian influenza H5N8. Science 354:213-217.

b) International conferences: 6
1.Hiroshi Kida: US-Japan Cooperative Medical Science Program
18th Acute Respiratory Infections Panel Meeting
January 13-14, 2016
Bethesda, MD, USA
Points for the control of avian influenza and preparedness for future pandemics
2.Hiroshi Kida: University of Zambia School of Veterinary Medicine
Veterinary School Main Lecture Theatre 14 June 2016, Lusaka, Zambia
Pandemic influenza as an example of emerging zoonoses
3.Hiroshi Kida: Asia-Pacific WHO/OIE/FAO Joint Workshop on Surveillance, Prevention and Control of Zoonotic influenza, Paro, Bhutan, 30 August 2016
Control of avian influenza and preparedness for pandemic influenza
4.Hiroshi Kida: The 8th International Global Virus Network Meeting
25 October 2016, Sapporo
We are prepared for pandemic influenza.
5.Hiroshi Kida: Keynote Lecture for Lecture Series on One Health
First Meeting on Technical Cooperative Network
Nov 15th, 2016, Rangsit Campus, Thammasat University
How to control avian influenza and how to prepare for future pandemics in humans
6. Hiroshi Kida: “Points for the control of avian influenza and preparedness for future pandemics”. The 18th Respiratory Infections (ARI) Panel Meeting, The Bethesda North Marriott Hotel and Conference Center, Bethethda , United States of America, 14 January 2016.

c) National conferences: 4
1. Yoshihiro Sakoda: Influenza virus infections at the animal-human interface, The 64th Japanese Society of Virology, Sapporo, Japan, October 23, 2016
2. Hiroshi Kida: The 4th Meeting of the Consortium for the Control of Zoonoses WHO Collaborating Centre Conference Room, 8 July 2016, Sapporo, Japan
Hokkaido University Research Center for Zoonosis Control
We are prepared for pandemic influenza
3. Hiroshi Kida: Special Lecture School of Veterinary Medicine, Hokkaido University,Japan, 2 May 2016, Looking back and forward on One Health Strategy – 40 years struggle for the control of zoonoses –
4.Hiroshi Kida: 2016 Training Course for Tropical Medicine 3 June 2016, Nagasaki University, Japan, Nagasaki
Pandemic influenza as an example of emerging zoonoses

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?

Yes

a) Technical visits: 4
b) Seminars: 0
c) Hands-on training courses: 8
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	Mongolia	4
c	Thailand	2
c	Vietnam	1
c	Zambia	1
c	Kenya	1
c	Nepal	1
c	Bangladesh	1
c	Mongolia	1

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 certified according to an International Standard?

No

Explain Quality Management System in adoption process or currently in place
ISO/IEC 17025 in preparation

16. Is your laboratory accredited by an international accreditation body?

No

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?

No

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

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: