

# WOAH Reference Laboratory Reports Activities 2025

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## LABORATORY INFORMATION

<b>*Name of disease (or topic) for which you are a designated WOA Reference Laboratory:</b>	Avian influenza
<b>*Address of laboratory:</b>	1. 678 Haping Road, Harbin, 150069, CHINA (PEOPLES REP. OF) 2. 427 Maduan Street, Harbin, 150001, CHINA (PEOPLES REP. OF)
<b>*Tel:</b>	+86-451 51997168
<b>*E-mail address:</b>	chenhualan@caas.cn
<b>Website:</b>	www.hvri.ac.cn
<b>*Name (including Title) of Head of Laboratory (Responsible Official):</b>	Hualan Chen (Professor, Director)
<b>*Name (including Title and Position) of WOA Reference Expert:</b>	Hualan Chen (Professor)
<b>*Which of the following defines your laboratory? Check all that apply:</b>	Academic institution

## 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 WOA Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
<b>Indirect diagnostic tests</b>			
Hemagglutination Inhibition test (H5) for avian samples	Yes	6160	0
Hemagglutination Inhibition test (H7) for avian samples	Yes	6160	0
Hemagglutination Inhibition test (H9) for avian samples	Yes	6160	0
Hemagglutination inhibition test (H1) for swine samples	Yes	1800	0
Hemagglutination inhibition test (H3) for swine samples	Yes	1800	0
Hemagglutination inhibition test (H5) for dairy cow samples	Yes	1768	0
Hemagglutination inhibition assay (H3) of canine and feline sera	Yes	1250	0
<b>Direct diagnostic tests</b>			
Chicken embros	Yes	76347	0
RT-PCR	Yes	3102	0

## TOR2: REFERENCE MATERIAL

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

No

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

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient WOA?H Member Countries	Country of recipients
H5 subtype avian influenza antigens	Serological assays (e.g., HI)	Produced	18,558 mL	920 mL	2	CHINA (PEOPLE'S REP. OF), EGYPT,
H5 subtype avian influenza antisera	Serological assays (e.g., HI)	Produced	7,034 mL	460 mL	2	CHINA (PEOPLE'S REP. OF), EGYPT,
H7 subtype avian influenza antigens	Serological assays (e.g., HI)	Produced	9,488 mL	0	1	CHINA (PEOPLE'S REP. OF),
H7 subtype avian influenza antisera	Serological assays (e.g., HI)	Produced	2,890 mL	0	1	CHINA (PEOPLE'S REP. OF),
H9 subtype avian influenza antigens	Serological assays (e.g., HI)	Produced	2,572 mL	320 mL	2	CHINA (PEOPLE'S REP. OF), EGYPT,
H9 subtype avian influenza antisera	Serological assays (e.g., HI)	Produced	668 mL	160 mL	2	CHINA (PEOPLE'S REP. OF), EGYPT,

4. Did your laboratory produce vaccines?

Yes

5. Did your laboratory supply vaccines to WOA?H Members?

Yes

Vaccine name	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	Name of recipient WOA?H Members
Avian influenza virus inactivated vaccine(H5)	0	9,687,500 mL	EGYPT
Bivalent Avian influenza virus inactivated vaccine(H5)	0	12,500,000 mL	IRAN
Bivalent Avian influenza virus inactivated vaccine (H5+H9)	0	687,500 mL	EGYPT
Trivalent Avian influenza virus inactivated vaccine (H5+H7)	181,965,350 mL	0	CHINA (PEOPLE'S REP. OF)
Quadrivalent Avian influenza virus inactivated vaccine (H5+H7)	55,902,500 mL	0	CHINA (PEOPLE'S REP. OF)
Bivalent Avian influenza virus (H5)-NDV inactivated vaccine	0	50,498,750	EGYPT
Trivalent Avian influenza virus (H5+H9)-NDV inactivated vaccine	0	18,000,000 mL	EGYPT

## TOR3: NEW PROCEDURES

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

Yes

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

Yes

Name of the new test or diagnostic method developed	Description and References (Publication, website, etc.)
An on-site visual detection method for Eurasian Avian-like H1N1 Swine influenza virus based on RT-RPA and CRISPR/Cas12a	Viruses 2026, 18(1), 47; <a href="https://doi.org/10.3390/v18010047">https://doi.org/10.3390/v18010047</a> . A Portable One-Tube Assay Integrating RT-RPA and CRISPR/Cas12a for Rapid Visual Detection of Eurasian Avian-like H1N1 Swine Influenza Virus in the Field

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

Yes

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

Yes

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Name of the new vaccine developed	Description and References (Publication, website, etc)
Recombinant Avian Influenza Virus (H5 Subtype) Bivalent Inactivated Vaccine (Strain H5N6 H5-Re15 + H5-Re16)	Ministry of Agriculture and Rural Affairs Announcement No. 943 (2025) <a href="https://www.moa.gov.cn/nybgb/2025/202511/202511/t20251121_6479101.htm">https://www.moa.gov.cn/nybgb/2025/202511/202511/t20251121_6479101.htm</a>
Recombinant Avian Influenza Virus (H5+H7) Tetravalent Inactivated Vaccine (Strain H5N6 H5-Re15 + H5-Re16; Strain H7N9 H7-Re5 + H7-Re6)	Ministry of Agriculture and Rural Affairs Announcement No. 943 (2025) <a href="https://www.moa.gov.cn/nybgb/2025/202511/202511/t20251121_6479101.htm">https://www.moa.gov.cn/nybgb/2025/202511/202511/t20251121_6479101.htm</a>
Recombinant Avian Influenza Virus (H5 Subtype) Bivalent Inactivated Vaccine (Cell-culture derived, Strain H5N6 H5-Re15 + H5-Re16)	Ministry of Agriculture and Rural Affairs Announcement No. 943 (2025) <a href="https://www.moa.gov.cn/nybgb/2025/202511/202511/t20251121_6479101.htm">https://www.moa.gov.cn/nybgb/2025/202511/202511/t20251121_6479101.htm</a>
Recombinant Avian Influenza Virus (H5+H7) Tetravalent Inactivated Vaccine (Cell-culture derived, Strain H5N6 H5-Re15 + H5-Re16; Strain H7N9 H7-Re5 + H7-Re6)	Ministry of Agriculture and Rural Affairs Announcement No. 943 (2025) <a href="https://www.moa.gov.cn/nybgb/2025/202511/202511/t20251121_6479101.htm">https://www.moa.gov.cn/nybgb/2025/202511/202511/t20251121_6479101.htm</a>
Recombinant Avian Influenza Virus Inactivated Vaccine (H9N2 Subtype, Strain H9-Egy/Re3)	Letter of the Bureau of Animal Husbandry and Veterinary Services No. 209 (2025)
Avian Influenza (H9) and Newcastle Disease Vaccine, Inactivated (Strain H9N2 H9-Egy/Re3 + ND rLa-VII)	Letter of the Bureau of Animal Husbandry and Veterinary Services No. 209 (2025)
Recombinant Avian Influenza Virus Inactivated Vaccine (H5N1 Subtype, Strain H5-Egy/PR8-7)	Letter of the Bureau of Animal Husbandry and Veterinary Services No. 904 (2025)
Avian Influenza (H5+H9) Bivalent Inactivated Vaccine (Strain H5N1 H5-Egy/PR8-7 + H9N2 H9-Egy/PR8-3)	Letter of the Bureau of Animal Husbandry and Veterinary Services No. 904 (2025)
Avian Influenza and Newcastle Disease Vaccine, Inactivated (Strain H5N1 H5-Egy/PR8-7 + ND rLa-VII)	Letter of the Bureau of Animal Husbandry and Veterinary Services No. 904 (2025)
Avian Influenza (H5+H9) and Newcastle Disease Vaccine, Inactivated (Strain H5N1 H5-Egy/PR8-7 + H9N2 H9-Egy/PR8-3 + ND rLa-VII)	Letter of the Bureau of Animal Husbandry and Veterinary Services No. 904 (2025)
Avian Influenza (H5+H9), Newcastle Disease, and Infectious Bursal Disease Vaccine, Inactivated (Strain H5N1 H5-Egy/PR8-7 + H9N2 H9-Egy/PR8-3 + ND rLa-VII + IBD SHG19-VP2 Protein)	Letter of the Bureau of Animal Husbandry and Veterinary Services No. 904 (2025)
Avian Influenza Vaccine, Live (Recombinant Duck Enteritis Virus Vector, H5 Subtype, Strain rDEV-14)	Ministry of Agriculture and Rural Affairs Announcement No. 943 (2025) <a href="https://www.moa.gov.cn/nybgb/2025/202511/202511/t20251121_6479101.htm">https://www.moa.gov.cn/nybgb/2025/202511/202511/t20251121_6479101.htm</a>
Avian Influenza Bivalent Vaccine, Live (Recombinant Duck Enteritis Virus Vector, H5 Subtype, Strain rDEV-13 + rDEV-14)	Ministry of Agriculture and Rural Affairs Announcement No. 943 (2025) <a href="https://www.moa.gov.cn/nybgb/2025/202511/202511/t20251121_6479101.htm">https://www.moa.gov.cn/nybgb/2025/202511/202511/t20251121_6479101.htm</a>

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Avian Influenza Vaccine, Live (Recombinant Herpesvirus of Turkey Vector, Strain rHVT-HA AF14)	Letter of the Bureau of Animal Husbandry and Veterinary Services No. 1048 (2025)
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## 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
EGYPT	Technical support for vaccine development	Conference presentations and face-to-face communication

## TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	WOAHP Member Countries involved other than your country
Studies to control emerging, re-emerging and imported infectious diseases to be conducted in international collaboration sites in CHINA	01 April 2020 – 31 March 2025	To study the ecology and genetic changes in nature of viruses responsible for emerging and re-emerging infections in animals and humans in Asia	The Institute of Medical Science, the University of Tokyo (IMSUT)	JAPAN
Understanding the Molecular Features of Novel Emergent Avian Influenza Viruses Posing Zoonotic and Pandemic Threats	2024.9-2027.8	This project aims to address the zoonotic and pandemic threats posed by emerging strains of avian influenza viruses (AIVs), specifically H9Nx and H7Nx.	The Pirbright Institute	UNITED KINGDOM
Studies to control emerging, re-emerging and imported infectious diseases to be conducted in international collaboration sites in CHINA	01 April 2025 – 31 March 2027	To study the ecology and genetic changes in nature of viruses responsible for emerging and re-emerging infections in animals and humans in Asia	The Institute of Medical Science, the University of Tokyo (IMSUT)	JAPAN

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

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:

1. Surveillance of influenza virus in wild birds: We characterized H11 subtype avian influenza viruses from wild birds. Phylogenetic analysis indicated these viruses belong to the Eurasian lineage, confirming their spread via migratory flyways across borders. Notably, these viruses underwent reassortment with the globally circulating H5N1 clade 2.3.4.4b viruses and exhibited dual receptor-binding specificity (human and avian), highlighting the role of wild birds as reservoirs for potential pandemic candidates.

2. Identification of Emerging Viruses with Pandemic Potential:

We identified and characterized emerging H3N3 reassortant viruses in poultry. These viruses originated from multiple subtypes (H3N8, H10N3) and demonstrated the ability to bind human-type receptors and transmit efficiently via respiratory droplets in mammals (guinea pigs). This data provides an early warning for novel viruses with zoonotic and pandemic potential, which is critical for global influenza preparedness.

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:

Epidemiological data were disseminated through scientific publications and periodic reports to the veterinary authorities.

1. Scientific Publications:

- (1) Zhao, Z., et al., 2025. Epidemiology, evolution, and biological characteristics of avian influenza A (H11) viruses from wild birds. *Virulence*, 16: 2591462.  
(2) Yan, C., et al., 2025. Characterization of emerging H3N3 avian influenza viruses in poultry in China. *Emerg Microbes Infect*, 14: 2509748.

2. Official Reports: Surveillance data regarding H5, H7, H9 subtypes and Swine Influenza viruses were processed, analyzed, and submitted to the Ministry of Agriculture and Rural Affairs (MARA) of China.

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:

22

- (1) Zhong, Q., et al., 2025. Intranasal administration of cold-adapted live-attenuated Eurasian avian-like H1N1 vaccine candidate confers protection against different-lineage H1N1 viruses in mice. *Vaccines (Basel)*, 13: 596.  
(2) Zhao, Z., et al., 2025. Epidemiology, evolution, and biological characteristics of avian influenza A (H11) viruses from wild birds. *Virulence*, 16: 2591462.  
(3) Zhao, Y., et al., 2025. Recombinant duck enteritis virus harboring the hemagglutinin genes of influenza virus rapidly induces specific cellular immunity in ducks. *J Virol*, e0201425.  
(4) Zhao, H., et al., 2025. Celebrating three years of Science in One Health: shaping a transdisciplinary community. *Elsevier*, 100124.  
(5) Zhao, B., et al., 2025. Structural basis of different neutralization capabilities of monoclonal antibodies against H7N9 virus. *J Virol*, 99: e0140024.  
(6) Zhang, W., et al., 2025. Research priorities for zoonotic and pandemic influenza vaccines: Evidence and recommendations from the WHO public health research agenda for influenza (2024 update). *Vaccines (Basel)*, 13: 121206.  
(7) Wan, Y., et al., 2025. Identification and functional analysis of adaptive amino acid mutations in the Eurasian avian-like H1N1 swine influenza virus. *Scientia Agricultura Sinica*, 58: 2035-2044.  
(8) Yu, X., et al., 2025. Claudin-11 plays a pivotal role in the clathrin-mediated endocytosis of influenza A virus. *Sci China Life Sci*, 68: 1463-1477.  
(9) Yang, Y., et al., 2025. PA-X 122V broadly determines the host shutoff activity of influenza A viruses. *mBio*, e0343325.  
(10) Yan, C., et al., 2025. Characterization of emerging H3N3 avian influenza viruses in poultry in China. *Emerg Microbes Infect*, 14: 2509748.  
(11) Wang, Y., et al., 2025. TRIM45 restricts influenza virus infection through modulating the chaperone-mediated autophagic degradation of viral PB2 protein. *Plos Pathog*, 21: e1013630.  
(12) Wang, X., et al., 2025. Identification of a broad-inhibition influenza neuraminidase antibody from pre-existing memory B cells. *Cell Host Microbe*, 33: 151-166.  
(13) Wang, Q., et al., 2025. N6-methyladenosine of vRNA facilitates influenza A virus replication by promoting the interaction of vRNA with polymerase proteins. *Proc Natl Acad Sci U S A*, 122: e2411554122.  
(14) Wang, G., et al., 2025. Cellular SLC35B4 promotes internalization during influenza A virus entry. *mBio*, 16: e0019425.  
(15) Wang, G., et al., 2025. Genome-wide siRNA library screening identifies human host factors that influence the replication of the highly pathogenic H5N1 influenza virus. *mLife*, 4: 55-69.  
(16) Wang, B., et al., 2025. A strand-specific quantitative RT-PCR method for detecting vRNA, cRNA, and mRNA of H7N9 avian influenza virus in a mouse model. *Viruses*, 17: 1007.  
(17) Shi, J., et al., 2025. H5N1 virus invades the mammary glands of dairy cattle through "mouth-to-teat" transmission. *National Science Review*, nwaf262.  
(18) Yu, Q., et al., 2025. Immune effect evaluation of combined inactivated vaccine against avian influenza and Newcastle disease. *Scientia Agricultura Sinica*, 58: 182-191.  
(19) Meng, F., et al., 2025. H128N substitution in the Sa antigenic site of HA1 causes antigenic drift between Eurasian avian-like H1N1 and 2009 pandemic H1N1 influenza viruses. *Viruses*, 17: 1360.  
(20) Huang, J., et al., 2025. The viral proteins of influenza A virus competitively bind to TRIM31 with MAVS to fine-tune the antiviral innate immunity. *J Virol*, 99: e0189325.  
(21) Fan, W., et al., 2025. A recombinant Marek's disease vaccine candidate provides complete protection against infectious bursal disease virus and H9 subtype avian influenza virus in chickens. *J Virol*, 99: e0114925.  
(22) Chang, Y., et al., 2025. KRT6A restricts influenza A virus replication by inhibiting the nuclear import and assembly of viral ribonucleoprotein complex. *Viruses*, 17: 671.

b) International conferences:

17

- (1) Professor Chengjun Li chaired the Asia-Africa Regional Workshop on Animal Disease Prevention and Control held in Addis Ababa, Ethiopia, on November 4, 2025.

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- (2) Professor Xianying Zeng gave a presentation with the title of 'Development of novel avian influenza vaccines' at the Asia-Africa Regional Workshop on Animal Disease Prevention and Control held in Addis Ababa, Ethiopia, on November 4, 2025.
- (3) Professor Hualan Chen gave a presentation with the title of 'Research on H5N1 Influenza Virus in Dairy Cows: Insights into Transmission, Prevention, and Control' at the 11th Wuhan International Symposium on Modern Virology held in Wuhan, China, on October 30, 2025.
- (4) Professor Chengjun Li chaired a session at the 2025 China-Africa Agricultural Science and Technology Innovation Alliance Conference (Animal Disease Prevention and Control Side Event) held in Addis Ababa, Ethiopia, on October 28, 2025.
- (5) Professor Chengjun Li gave a presentation with the title of 'Current situations and prevention of avian influenza' at the 2025 China-Africa Agricultural Science and Technology Innovation Alliance Conference (Animal Disease Prevention and Control Side Event) held in Addis Ababa, Ethiopia, on October 28, 2025.
- (6) Professor Pucheng Chen gave a presentation with the title of 'Development of polyvalent herpesvirus of turkey (HVT) vector vaccine against H5 and H7 subtype highly pathogenic avian influenza virus' at the 9th International Virology Conference organized by the Egyptian Society of Virology ("One Health Approach to Emerging Viral Threats") held in Cairo, Egypt, on October 21, 2025.
- (7) Professor Hualan Chen gave a presentation with the title of 'H5N1 virus invades the mammary glands of dairy cattle through "mouth-to-teat" transmission' at the 31st Annual Meeting of the National Reference Laboratories for Avian Influenza and Newcastle Disease of European Union Member States held in Treviso, Italy, on October 16, 2025.
- (8) Professor Hualan Chen gave a presentation with the title of 'Control of highly pathogenic avian influenza in animals through vaccination' at the Symposium on the Pandemic Threat of Influenza and Other Respiratory Viruses held in Singapore, on September 15, 2025.
- (9) Professor Huihui Kong gave a presentation with the title of 'Implementing effective vaccination' at the Tackling high pathogenicity avian influenza together meeting held in Foz do Iguaçu, Brazil, on September 10, 2025.
- (10) Professor Yongping Jiang gave a presentation with the title of 'Electroporation-mediated delivery improves the immunogenicity of avian influenza DNA vaccines' at the 19th Vaccine congress held in Kyoto, Japan, on September 8, 2025.
- (11) Professor Hualan Chen gave a presentation with the title of 'Control of highly pathogenic avian influenza through vaccination' at the 19th Vaccine congress held in Kyoto, Japan, on September 7, 2025.
- (12) Professor Hualan Chen gave a presentation with the title of 'Control of highly pathogenic avian influenza in animals through vaccination' at the Symposium on the Pandemic Threat of Influenza and Other Respiratory Viruses held in Sapporo, Japan, on August 26, 2025.
- (13) Professor Hualan Chen gave a presentation with the title of 'Recent progress in the transmission and control of bovine H5N1 influenza' at the 16th National Virology Academic Symposium held in Changchun, China, on August 15, 2025.
- (14) Professor Huihui Kong gave a presentation with the title of 'Genetic and Biological Characterization of H3N2 and H10N3 Avian Influenza Viruses Isolated in China' at the 11th International Symposium on Avian Influenza held in St. John's, Canada, on June 25, 2025.
- (15) Professor Pengfei Cui gave a poster presentation with the title of 'H3N8 avian influenza viruses in poultry caused human infections in China' at the 11th International Symposium on Avian Influenza held in St. John's, Canada, on June 24, 2025.
- (16) Professor Yongping Jiang gave a poster presentation with the title of 'Development of avian influenza (H5+H7) trivalent DNA vaccine' at the 11th International Symposium on Avian Influenza held in St. John's, Canada, on June 24, 2025.
- (17) Professor Chengjun Li gave a poster presentation with the title of 'Cellular SLC35B4 promotes internalization during influenza A virus entry' at the 11th International Symposium on Avian Influenza held in St. John's, Canada, on June 24, 2025.

c) National conferences:

10

- (1) Professor Hualan Chen gave a presentation with the title of 'Global epidemic trends of highly pathogenic avian influenza and prevention and control effectiveness in China' at the "Wisdom of Light" Academician Series Lectures held in Shanghai, China, on March 11, 2025.
- (2) Professor Hualan Chen attended the First Meeting of the First Academic Committee of the State Key Laboratory of Highly Pathogenic Viruses and Biosafety and 2025 Annual Academic Conference held in Wuhan, China, on April 20-21, 2025.
- (3) Professor Hualan Chen gave a presentation with the title of 'Precise prevention and control of zoonotic infectious diseases' at Xiangshan Science Conference Academic Symposium on Prevention and Control of Public Health Emergencies held in Guangzhou, China, on May 15, 2025.
- (4) Professor Hualan Chen gave a presentation at the 3rd Academic Committee Meeting of the State Key Laboratory of Animal Disease Control and Prevention held in Harbin, China, on August 1, 2025.
- (5) Professor Huihui Kong gave a presentation at the 3rd Academic Committee Meeting of the State Key Laboratory of Animal Disease Control and Prevention held in Harbin, China, on August 1, 2025.
- (6) Professor Hualan Chen gave a presentation with the title of 'Research and prevention and control of highly pathogenic avian influenza viruses' at the Fuxi Hall Forum of Gansu Agricultural University held in Lanzhou, China, on September 22, 2025.
- (7) Professor Xianying Zeng gave a presentation with the title of 'Prevalence and prevention and control of avian influenza' at the 40th Anniversary Celebration of the Poultry and Avian Diseases Branch of Guangxi Animal Husbandry and Veterinary Society held in Nanning, China, on September 27, 2025.
- (8) Professor Xianying Zeng gave a presentation at the 16th Harbin Weike Animal Disease Prevention and Control Technology Forum held in Hangzhou, China, on October 15, 2025.
- (9) Professor Xianying Zeng gave a presentation at the 7th China Egg Industry Conference held in Taiyuan, China, on October 27, 2025.
- (10) Professor Huihui Kong gave a presentation at the Young Scholars Forum on the Frontier of Animal Microecology Development held in Changchun, on November 22, 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 : 4

b) Seminars : 0

c) Hands-on training courses: 0

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	CHINA (PEOPLE'S REP. OF)	10
A	CHINA (PEOPLE'S REP. OF)	5
A	CHINA (PEOPLE'S REP. OF)	4
A	CHINA (PEOPLE'S REP. OF)	5

## 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	JPG	ISO-IEC 17025-CNAS.jpg

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Isolation of influenza virus	ILAC
RT-PCR	ILAC
HI assay	ILAC
Neutralization assay	ILAC

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

Yes

Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, Chapter 1.1.4

## TOR9: SCIENTIFIC MEETINGS

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

Yes

National/ International	Title of event	Co-organiser	Date	location	No. Participants
National	2025 National Animal Influenza Surveillance Technology Training Meeting	-	2025-08-01	Ningbo, Zhejiang	150

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
Asia-Africa Regional Workshop				

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on Animal Disease Prevention and Control	2025-11-03	Addis Ababa, Ethiopia	chair, speaker	Development of novel avian influenza vaccines
the 11th Wuhan International Symposium on Modern Virology	2025-10-29	Wuhan, China	speaker	Research on H5N1 Influenza Virus in Dairy Cows: Insights into Transmission, Prevention, and Control
the 2025 China-Africa Agricultural Science and Technology Innovation Alliance Conference	2025-10-27	Addis Ababa, Ethiopia	chair and speaker	Current situations and prevention of avian influenza
the 9th International Virology Conference organized by the Egyptian Society of Virology	2025-10-20	Cairo, Egypt	speaker	Development of polyvalent herpesvirus of turkey (HVT) vector vaccine against H5 and H7 subtype highly pathogenic avian influenza virus
the 31st Annual Meeting of the National Reference Laboratories for Avian Influenza and Newcastle Disease of European Union Member States	2025-10-15	Treviso, Italy	speaker	H5N1 virus invades the mammary glands of dairy cattle through "mouth-to-teat" transmission
the Symposium on the Pandemic Threat of Influenza and Other Respiratory Viruses	2025-09-14	Singapore	speaker	Control of highly pathogenic avian influenza in animals through vaccination
Tackling high pathogenicity avian influenza together meeting	2025-09-09	Foz do Iguaçu, Brazil	speaker	Implementing effective vaccination
the 19th Vaccine congress	2025-09-06	Kyoto, Japan	speaker	Electroporation-mediated delivery improves the immunogenicity of avian influenza DNA vaccines
the 16th National Virology Academic Symposium	2025-08-14	Changchun, China	speaker	Recent progress in the transmission and control of bovine H5N1 influenza
the 11th International Symposium on Avian Influenza	2025-06-24	St. John's, Canada	speaker	Genetic and Biological Characterization of H3N2 and H10N3 Avian Influenza Viruses Isolated in China
11th International Symposium on Avian Influenza	2025-06-23	St. John's, Canada	presenting poster	H3N8 avian influenza viruses in poultry caused human infections in China; 'Development of avian influenza (H5+H7) trivalent DNA vaccine; Cellular SLC35B4 promotes internalization during influenza A virus entry

## 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?

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOAHP REF. LABS
			1. Australia – CSIRO Australian Centre for Disease Preparedness (ACDP) – Designated expert: Dr. Frank Wong 2. Brazil – Laboratório Federal de Defesa Agropecuária – LFDA/SP – CGAL (Campinas, São Paulo) – Dra. Dilmara

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OFFLU network	PARTICIPANT	13	<p>Reischak 3. Canada – Canadian Food Inspection Agency, National Centre for Foreign Animal Disease (NCFAD), Winnipeg – Dr. Yohannes Berhane 4. Egypt – Reference Laboratory for Veterinary Quality Control on Poultry Production (AHRI, Giza) – Dr. Abdelsatar Arafa 5. Germany – Friedrich-Loeffler-Institut (FLI), Institute of Diagnostic Virology (Insel Riems/Greifswald) – Dr. Timm C. Harder 6. India – ICAR, National Institute of High Security Animal Diseases (NIHSAD), Bhopal – Dr. Chakradhar Tosh 7. Italy – Istituto Zooprofilattico Sperimentale delle Venezie (IZSVE), Research &amp; Innovation Dept., Legnaro – Dr. Isabella Monne 8. Japan – Hokkaido University, Research Center for Zoonosis Control (Sapporo) – Prof. Yoshihiro Sakoda 9. Republic of Korea – Animal and Plant Quarantine Agency (APQA), Gimcheon – Dr. Eun-Kyoung Lee 10. People's Republic of China – Harbin Veterinary Research Institute (HVRI), National Avian Influenza Reference Laboratory – Dr. Hualan Chen 11. Russia – Federal Centre for Animal Health (FGBI "ARRIAH"), National Reference Laboratory for AI &amp; ND – Dr. Viktor N. Irza 12. United Kingdom – Animal and Plant Health Agency (APHA), Weybridge (WOAH/FAO International Reference Laboratory for Avian Influenza) – Dr. Ashley Banyard 13. United States of America – USDA/APHIS, National Veterinary Services Laboratories (NVSL), Ames, Iowa – Dr. Mia Kim Torchetti</p>
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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?

Yes

Purpose of the proficiency test:	Role of your Reference Laboratory (organiser/ participant)	No. participating Laboratories	Participating WOA Ref. Labs/ organising WOA Ref Lab
To test and document the ability of OFFLU member laboratories to detect and characterize notifiable avian influenza (NAI) and other relevant avian influenza viruses with the aim of improving accurate global detection and characterization of influenza in birds.	participant	11	unknown/Australian Centre for Disease Preparedness (ACDP)

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?

No

## TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOA Reference Laboratories for the same pathogen during the past 2 years?

Yes

Role of your reference			
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Purpose for inter-laboratory test comparisons <sup>1</sup>	laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAH Member Countries
To evaluate the laboratory proficiency in farms and vaccine manufacturing enterprises in China	ORGANIZEER	4	HA and HI test	CHINA (PEOPLE'S REP. OF),

## TOR12: EXPERT CONSULTANTS

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

Yes

Kind of consultancy	Location	Subject (facultative)
Technical consultation to WOAHP/EU Reference Laboratory Network	Treviso, Italy	Prof. Hualan Chen delivered a presentation "H5N1 virus invades the mammary glands of dairy cattle through 'mouth-to-teat' transmission" at the 31st Annual Meeting of the EU Member States' National Reference Laboratories for Avian Influenza and Newcastle Disease (16 Oct 2025).

29. Additional comments regarding your report:

No

*Although the responses to some questions are "No" for the current reporting period, our laboratory has established technical capacity and expertise in diagnostic testing, information sharing, and scientific collaboration. We remain ready to provide support to WOAHP and its Members upon request, including diagnostic services, data exchange, and technical consultation.*