

WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted : 9 mars 2023 16:24

Laboratory Information

Name of disease (or topic) for which you are a designated WOA Reference Laboratory:	
Address of laboratory:	
Tel.:	
E-mail address:	
Website:	
Name (including Title) of Head of Laboratory (Responsible Official):	
Name (including Title and Position) of WOA Reference Expert:	
Which of the following defines your laboratory? Check all that apply:	

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	
Indirect diagnostic tests		Nationally	Internationally
Influenza A NP specific cELISA	Yes	10,310	500
AGID	Yes	148	0
Hemagglutination inhibition assay	Yes	1644	150
H5 and H7 cELISA	No (in house)	5452	125
Direct diagnostic tests		Nationally	Internationally
Virus isolation	Yes	1363	

			101
Influenza A matrix rRT-PCR	Yes	35514	450
Influenza A H5 and H7 rRT-PCR	Yes	7132	450
HA subtyping (HI - H1 to H16)	Yes	304	101
NA subtyping (N1 to N9)	Yes	6	0
Molecular pathotyping and NGS	Yes	2147	101
IVPI	Yes	5	0

TOR2: REFERENCE MATERIAL

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
PCR panel for AI	PCR proficiency test	In house		6 X 1ml	2	Africa America
Inactivated influenza A HI panel	Hemagglutination inhibition assay	In house		8 x 5ml	1	Africa

4. Did your laboratory produce vaccines?

No

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

No

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 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.)
H5 real time RT-PCR (Modification)	Unpublished

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

No

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

No

TOR4: DIAGNOSTIC TESTING FACILITIES

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

Yes

NAME OF WOAHH MEMBER COUNTRY SEEKING ASSISTANCE	DATE	WHICH DIAGNOSTIC TEST USED	NO. SAMPLES RECEIVED FOR PROVISION OF DIAGNOSTIC SUPPORT	NO. SAMPLES RECEIVED FOR PROVISION OF CONFIRMATORY DIAGNOSES
GHANA	2022-07-11	PCR, Isolation, Sequencing	250	65

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

Yes

NAME OF THE WOAHH MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
MEXICO	Bioinformatics support	Via zoom meetings

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

Yes

Title of the study	Duration	PURPOSE OF THE STUDY	PARTNERS (INSTITUTIONS)	WOAHH MEMBER COUNTRIES INVOLVED OTHER THAN YOUR COUNTRY
Transatlantic spread of highly pathogenic avian influenza H5N1 by wild birds from Europe to North America in 2021	2 months	Investigation of the transatlantic incursion of 2.3.4.4b clade H5N1 by wild birds from Europe to North America in 2021	Multiple European Labs	THE NETHERLANDS
Multiple introductions of genetically distinct H5 HPAI viruses into Canada via both East Asia-Australasia/Pacific and Atlantic flyways	2 months	Studying the possible routes of multiple introductions of genetically distinct 2.3.4.4b clade H5 HPAI viruses into Canada via Pacific and Atlantic flyways	Animal and Plant Health Agency-Weybridge	UNITED KINGDOM
Analysis of evolutionary dynamics of Mexican Lineage of H5 and H7 subtypes viruses from domestic poultry in Mexico	2 years	Conduct comprehensive evolutionary analysis of the Mexican lineage H5N2 and H7N3 avian influenza viruses	Food Inspection and Food Safety National Services (SENASICA), Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA),	MEXICO
Surveillance of influenza A and Newcastle disease				

viruses circulating in commercial domestic poultry, backyard flocks and live bird markets in Ghana	2 years	Conduct surveillance of influenza A viruses in domestic poultry in Ghana.	Accra Veterinary Services, Ghana	GHANA
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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 conducted surveillance of influenza A virus in domestic poultry and live bird markets in Ghana

15. Did your laboratory disseminate epidemiological data that had been processed and analysed?

No

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:

5

1). *Isolation and Characterization of Novel Reassortant Influenza A(H10N7) Virus in a Harbor Seal, British Columbia, Canada.*

Berhane Y, Joseph T, Lung O, Embury-Hyatt C, Xu W, Cottrell P, Raverty S.

Emerg Infect Dis. 2022 Jul;28(7):1480-1484. doi: 10.3201/eid2807.212302.

2). *Evolutionary Dynamics of Mexican Lineage H5N2 Avian Influenza Viruses.*

Xu W, Navarro-López R, Solis-Hernandez M, Liljehult-Fuentes F, Molina-Montiel M, Lagunas-Ayala M, Rocha-Martinez M, Ferrara-Tijera E, Pérez de la Rosa J, Berhane Y.

Viruses. 2022 May 3;14(5):958. doi: 10.3390/v14050958.

3). *Transatlantic spread of highly pathogenic avian influenza H5N1 by wild birds from Europe to North America in 2021.*

Caliendo V, Lewis NS, Pohlmann A, Baillie SR, Banyard AC, Beer M, Brown IH, Fouchier RAM, Hansen RDE, Lameris TK, Lang AS, Laurendeau S, Lung O, Robertson G, van der Jeugd H, Alkie TN, Thorup K, van Toor ML, Waldenström J, Yason C, Kuiken T, Berhane Y. *Sci Rep.* 2022 Jul 11;12(1):11729. doi: 10.1038/s41598-022-13447-z.

4). *A threat from both sides: Multiple introductions of genetically distinct H5 HPAI viruses into Canada via both East Asia-Australasia/Pacific and Atlantic flyways.*

Alkie TN, Lopes S, Hisanaga T, Xu W, Suderman M, Koziuk J, Fisher M, Redford T, Lung O, Joseph T, Himsworth CG, Brown IH, Bowes V, Lewis NS, Berhane Y.

Virus Evol. 2022 Aug 25;8(2):veac077. doi: 10.1093/ve/veac077. eCollection 2022.

5). *Phylogenetic Inference of the 2022 Highly Pathogenic H7N3 Avian Influenza Outbreak in Northern Mexico.*

Navarro-Lopez R, Xu W, Gomez-Romero N, Velazquez-Salinas L, Berhane Y.

Pathogens. 2022 Nov 1;11(11):1284. doi: 10.3390/pathogens11111284.

b) International conferences:

0

c) National conferences:

0

d) Other (Provide website address or link to appropriate information):

0

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAHA Members?

Yes

a) Technical visit : Yes - one

b) Seminars : Yes - two

c) Hands-on training courses: Yes - one

d) Internships (>1 month) no

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	Ghana	2
B	Ghana	5
B	Mexico	7
C	Ghana	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	ASB_CTF_15579-CFIA-Certificate_v1_2021-04-27.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
ELISA	Standard Council of Canada
hemagglutination Assay	Standard Council of Canada

Hemagglutination Inhibition Assay	Standard Council of Canada
Real time RT-PCR	Standard Council of Canada
IVPI	Standard Council of Canada
AGID	Standard Council of Canada
Virus Isolation	Standard Council of Canada
Molecular pathotyping	Standard Council of Canada

20. 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

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 WOA?

No

TOR10: NETWORK WITH WOA REFERENCE LABORATORIES

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

Yes

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

No

25. Did you organise or participate in inter-laboratory proficiency tests with WOA Reference Laboratories designated for the same pathogen?

No

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?

Yes

TITLE OF THE PROJECT OR CONTRACT	SCOPE	NAME(S) OF RELEVANT WOA REFERENCE LABORATORIES
Study on the multiple introductions of genetically distinct H5 HPAI viruses into Canada via both East Asia-Australasia/Pacific and Atlantic flyways.	Study focused on the introduction of 2.3.4.4b clade H5N1 to North America from the Pacific and the North Atlantic-linked flyways highlighting the expanding risk of genetically distinct virus introductions from different geographical locations and the potential for local reassortment with both the American lineage LPAI viruses in wild birds and with both Asian-like and European-like H5 HPAI viruses.	International Reference Laboratory for AI, Animal and Plant Health Agency- Weybridge, Woodham Lane, New Haw, Addlestone, Surrey KT15 3NB, UK.
Transatlantic spread of highly pathogenic avian influenza H5N1 by wild birds from Europe to North America in 2021	Study focused on the possible routes of incursion to North America of 2.3.4.4b clade H5N1 from Europe	FLI, Germany; Animal and Health Agency, DEFRA, UK

TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

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

Yes

Purpose for inter-laboratory test comparisons ¹	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Region(s) of participating WOAHA Member Countries
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PCR panels

Panel provider

1

Africa

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

Yes