

WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted : 25 avril 2023 15:03

Laboratory Information

Name of disease (or topic) for which you are a designated WOA Reference Laboratory:	Avian influenza
Address of laboratory:	Nadi-Elsaid st,
Tel.:	+20101560160
E-mail address:	araby85@hotmail.com, abd.arafa@hotmail.com
Website:	www.ahri.gov.eg
Name (including Title) of Head of Laboratory (Responsible Official):	Momtaz Shahein, Director of AHRI, ARC, Egypt
Name (including Title and Position) of WOA Reference Expert:	Dr. Abdelsatar Arafa, Head of Reference Laboratory for Veterinary Quality Control on Poultry Production
Which of the following defines your laboratory? Check all that apply:	Governmental Research agency

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
Haemoagglutination inhibition (H5)	Yes	22656	
Haemoagglutination inhibition (H9)	Yes	3771	
Direct diagnostic tests		Nationally	Internationally
PCR	Yes	5606	

Virus isolation	Yes	40	
Sequencing of HA gene	Yes	25	
Sequencing of NA gene	Yes	9	
WGS - Whole Genome Sequencing	Yes	3	

TOR2: REFERENCE MATERIAL

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

No

3. Did your laboratory supply standard reference reagents (nonWOAH-approved) and/or other diagnostic reagents to WOA 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 MEMBER COUNTRIES	COUNTRY OF RECIPIENTS
Antigen H9N2	HI	RLQP-AHRI-Egypt	40 ml	3 ml	1	Africa

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOA 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 Standards for the designated pathogen or disease?

No

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

No

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

No

TOR4: DIAGNOSTIC TESTING FACILITIES

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

No

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

Yes

NAME OF THE WOA MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
MOROCCO	To carry out a study for H9N2 viruses in Africa	Email communication

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
Genetic Variations among Different Variants of G1-like Avian Influenza H9N2 Viruses and Their Pathogenicity in Chickens	2 years	genetically and antigenically characterize different Egyptian LPAI H9N2 genotypes detected in birds in Egypt since 2011 and assess their pathogenesis	Zoonosis Science Center, Uppsala University , Sweden	SWEDEN
Pathogenicity of three genetically distinct and highly pathogenic Egyptian H5N8 avian influenza viruses in chickens	1 year	To investigate the differences in the pathogenicity, replication and transmissibility of three Egyptian HPAI H5 genotypes.	Murdoch University, Australia & United Arab Emirates University, Al-Ain & The Pirbright Institute, Surrey, UK	AUSTRALIA UNITED ARAB EMIRATES UNITED KINGDOM
Molecular Epidemiology and Evolutionary Analysis of Avian Influenza A(H5) Viruses Circulating in Egypt, 2019–2021	2 Years	To understand the diversity and evolution of HPAI H5N8 viruses circulating in Egyptian poultry.	Zoonosis Science Center, Uppsala University, Sweden	SWEDEN
Selenium nanoparticles enhance the efficacy of homologous vaccine against the highly pathogenic avian influenza H5N1 virus in chickens	1 Year	To evaluate the effect of the different doses of SeNPs incorporated in the chickens' diet or vaccine formula on the immunogenicity and efficiency of H5N1 whole inactivated vaccine against the homologous HPAI-H5N1 challenge strain.	Taif University, Saudi Arabia	SAUDI ARABIA
First isolation of influenza a subtype H5N8 in ostrich: pathological and genetic characterization	2 Years	To study the pathological and genetic characterization of influenza virus subtype H5N8 isolated from ostrich	Princess Nourah bint Abdulrahman University, Saudi Arabia & Jouf University, Saudi Arabia	SAUDI ARABIA
Genetic Characterization Of Avian Influenza Virus (H9N2) Hemagglutinin Genes In Broiler Chickens Of Luxor Governorate, Egypt	1 Year	To study genetic characterization of avian influenza virus (H9N2) (HA gene) from Broiler Chickens in Luxor	Obihiro University of Agriculture and Veterinary Medicine, , Obihiro, Hokkaido, Japan.	JAPAN

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:

National disease surveillance data to enhance detection, molecular analysis of new viruses circulating in the country.

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:

National surveillance program of the Egyptian Ministry of Agriculture to detect avian influenza viruses in domestic birds and commercial poultry holders.

Laboratory researches with local and international Research institutes/ Universities for avian influenza virus in poultry.

The Laboratory Management Information System: it provides regular reports of epidemiological data to the General organization of Veterinary services GOVS, Ministry of Agriculture, Ministry of Health and FAO.

OFFLU VCM network: for identification of animal and avian influenza viruses with zoonotic potential, that will help to select human vaccine seeds against zoonotic or pandemic influenza viruses from animal source. RLQP provided HA and NA sequences from 19 AI viruses of the H5 subtypes and 6 from H9 subtype.

Remote assistance to African labs by emails with research team collaboration to promote activities among scientists from African countries.

Meetings and seminars related to AI with regard to the epizootiological information and disease recording, characteristics of circulating viruses and laboratory methods; biosafety management, training and research programs that maintain information exchange with the OIE RL for AI, the FAO, the WHO, Reference Laboratories and National influenza Centres (NICs); participating in the AI Working groups.

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:

6

Molecular Epidemiology and Evolutionary Analysis of Avian Influenza A(H5) Viruses Circulating in Egypt, 2019–2021
Hagag, N.M., Yehia, N., El-Husseiny, M.H., ...Shahein, M.A., Naguib, M.M.
Viruses, 2022, 14(8), 1758

Selenium nanoparticles enhance the efficacy of homologous vaccine against the highly pathogenic avian influenza H5N1 virus in chickens
Yehia, N., AbdelSabour, M.A., Erfan, A.M., ...El-Saadony, M.T., Ahmed, K.A.

Saudi Journal of Biological Sciences this link is disabled, 2022, 29(4), pp. 2095–2111

Pathogenicity of three genetically distinct and highly pathogenic Egyptian H5N8 avian influenza viruses in chickens

Yehia, N., Erfan, A.M., Adel, A., ...El-Tarabily, K.A., Ahmed, K.A.

Poultry Science this link is disabled, 2022, 101(3), 101662

First isolation of influenza a subtype H5N8 in ostrich: pathological and genetic characterization

Elsayed, H.S., Adel, A., Alshaya, D.S., ...El-Saadony, M.T., Shahein, M.

Poultry Science, 2022, 101(12), 102156

Genetic Characterization Of Avian Influenza Virus (H9N2) Hemagglutinin Genes In Broiler Chickens Of Luxor Governorate, Egypt

Taha, M.E., Ahmed, M.S., Ahmed, A.I., ...Rehab, S., Osman, N.

Advances in Animal and Veterinary Sciences, 2022, 10(7), pp. 1567–1576

Genetic Variations among Different Variants of G1-like Avian Influenza H9N2 Viruses and Their Pathogenicity in Chickens

Adel, A., Abdelmagid, M.A., Mohamed, A.A.-E., ...Ellström, P., Naguib, M.M.

Viruses, 2022, 14(5), 1030

b) International conferences:

0

c) National conferences:

1

8th Conference of the Egyptian Society of Virology

"VIRAL INFECTIONS:

ONE HEALTH CHALLENGES AND SOLUTIONS": A session of poultry viruses including avian influenza was carried out and led by experts and professors from Germany, UK and Egypt. <https://www.esveg.org/events.html>

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

A session of poultry viruses including avian influenza was carried out and led by experts and professors from Germany, UK and Egypt. <https://www.esveg.org/events.html>

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 : 0

b) Seminars : 0

c) Hands-on training courses: 2

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

C	Egypt	3
C	Egypt	1

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO 17025	ISO-Certificate	203004_11_2017.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Detection of subtype-specific antibodies to Avian influenza virus by haemagglutination inhibition test	Egyptian Accreditation Council EGAC
Isolation and characterization of Avian influenza viruses using SPF embryonated chicken eggs and haemagglutination inhibition test	Egyptian Accreditation Council EGAC
Detection of AI virus (M, H5,H9) by Real Time PCR	Egyptian Accreditation Council EGAC
Sequencing of nucleotides of avian influenza virus (AIV)	Egyptian Accreditation Council EGAC

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

Yes

RLQP perform risk assessments to identify the biosafety and biosecurity measures needed to implement work with avian influenza safely. Biological risk analysis includes identification of biohazards, a laboratory assessment followed by management of the associated biological risks, and biological risk communication RLQP biological risk management system includes the Biosafety manual including policies, procedures (procedure No.22 for Biosafety) , and operational components needed for identifying, determining the extent of, managing, and communicating disease and economic risks associated with a specific biological agent in the context of how that agent is handled, manipulated, and maintained in the laboratory.

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?

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
OFFLU pre VCM February 2022 data discussion (avian and swine)	2022-02-14	Paris, France (hybrid)	Speaker	OFFLU pre VCM data discussion about avian influenza situation update (Egypt)
11th Regional Steering				

Committee (RSC) of the GF-TADs for Africa: Global Framework for the Progressive Control of Transboundary Animal Diseases (GF-TADs)	2022-06-21	Nairobi, Kenya (hybrid)	Speaker	The perspective of the WOA Reference Laboratories : Animal Health Research Institute (Egypt)
IABS Meeting on High Pathogenicity Avian Influenza Vaccination Strategies to prevent and control HPAI : Removing unnecessary barriers for usage	2022-10-25	Paris, France	Speaker	VACCINATION IN PLACES WHERE VIRUS IS ENDEMIC: Egypt Practice to control HPAI
OFFLU teleconference to discuss AI situation in poultry/wild birds	2022-12-05	Paris, France (hybrid)	Speaker	OFFLU call for avian influenza and wild bird situation update (Egypt)

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?

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOA REF. LABS/ ORGANISING WOA REF. LAB.
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25. Did you organise or participate in inter-laboratory proficiency tests with WOA Reference Laboratories designated for the same pathogen?

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOA REF. LABS/ ORGANISING WOA REF. LAB.
Avian influenza detection by RT-PCR, HI test for H5 and H9 subtypes, Genotyping of AIV using sequencing of HA gene	Participant	22	Organized by IZSve, Padova , Italy-2022

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?

No

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

Yes

Some activities remained limited due to travel restrictions and a lot of procedures (From/To)0 country such as external training from outside, travel of experts from inside and sample transfer.

A lot of delay in reagent supplies in customs/ports due to economic effects that reduced some of the testing related activities in the lab.