

WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted : 25 avril 2023 17:06

Laboratory Information

Name of disease (or topic) for which you are a designated WOAHO Reference Laboratory:	Swine Influenza
Address of laboratory:	Animal and Plant Health Agency – Weybridge, Addlestone, Surrey KT15 3NB UNITED KINGDOM
Tel.:	+44 208 026 9680
E-mail address:	lan.brown@apha.gov.uk
Website:	https://www.gov.uk/government/organisations/animal-and-plant-health-agency https://science.vla.gov.uk/fluglobalnet/
Name (including Title) of Head of Laboratory (Responsible Official):	Mr David Holdsworth, Chief Executive
Name (including Title and Position) of WOAHO Reference Expert:	Professor Ian Brown Director of WOAHO/FAO International Reference Laboratory for Avian Influenza, Newcastle Disease and Swine Influenza
Which of the following defines your laboratory? Check all that apply:	Governmental

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 WOAHO Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
0	No	0	0

Direct diagnostic tests		Nationally	Internationally
Real-time RT-PCR M gene	Yes	704	0
Real-time RT-PCR pH1N1 2009	Yes	0	0
Henritzi Subtyping RT-PCR	No	78	0
Next Generation Sequencing	Yes	80	0
HI	Yes	12	70
Egg inoculation/HA	Yes	0	20

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?

No

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?

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.)
New swine influenza A virus (SwIAV) hemagglutinin (HA) and neuraminidase (NA) subtype- and lineage-specific multiplex real-time RT-PCRs (RT-qPCR) assays have been assessed and are undergoing validation for sensitive subtype determination of swine influenza viruses with reference virus isolates and clinical samples. It is based on a test developed by Henritzi et al as detailed.	Henritzi, D., N. Zhao, E. Starick, G. Simon, J. S. Krog, L. E. Larsen, S. M. Reid, I. H. Brown, C. Chiapponi, E. Foni, S. Wacheck, P. Schmid, M. Beer, B. Hoffmann and T. C. Harder (2016). "Rapid detection and subtyping of European swine influenza viruses in porcine clinical samples by haemagglutinin- and neuraminidase-specific tetra- and triplex real-time RT-PCRs." Influenza Other Respir Viruses 10(6): 504-517 DOI: https://doi.org/10.1111/irv.12407 .

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 WOAH Members?

No

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

No

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
PIGIE	2021-2024	Define genetic and antigenic traits of swine influenza viruses circulating in European pig herds and identify potential control strategies	ANSES, FLI, University of Copenhagen, University of Barcelona, IZSLER (Parma) Includes linkages with CEVA who are part of the PIGIE consortium.	DENMARK ITALY SPAIN
Centres of Excellence for Influenza Research and response (CEIRR)	2021-2029	Development of pipelines for evaluation of the emergence of swine influenza viruses of pre-pandemic or pandemic risk.	NIAID funded programme. APHA supported via interactions with RVC and Penn-CEIRR. CEIRR Network (ceirr-network.org) https://www.niaid.nih.gov/research/centers-excellence-influenza-research-response	CAMBODIA UNITED KINGDOM UNITED STATES OF AMERICA
OFFLU VCM	Ongoing annual	Swine viruses and antisera have been added to the WHO VCM activities and as such we have characterised isolates both using genetic and antigenic tools and contributed this to the biannual VCM activities.	OFFLU swine subgroup plus miscellaneous institutes	
Influenza D virus	Ongoing annual	Exchange of influenza D virus-specific antisera, viral isolates and method evaluation, particularly with	IZSLER	

	troubleshooting serological methods	
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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:

Collection and characterisation of a range of SwIV samples including meta data within the UK, through surveillance activities to provide an epidemiological picture and analysis of viral diversity across the UK.

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:

An analysis of the epidemiological data, collected nationally, was disseminated through governmental outputs, and in peer-reviewed publications, detailing the evolution of SWIV and epidemiological picture of with relation to the UK situation.

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:

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Vatzia, E., K. Feest, A. McNee, T. Manjegowda, V. Carr, B. Paudyal, T. Chrun, E. Maze, S. Morris, H. Everett, R. MacLoughlin, F. Salguero, T. Lambe, S. Gilbert and E. Tchilian (2022). Immunization with matrix-, nucleoprotein and neuraminidase protects against H3N2 influenza challenge in pH1N1 pre-exposed pigs. DOI: <https://doi.org/10.21203/rs.3.rs-2062602/v1>.

b) International conferences:

c) National conferences:

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

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Dr Ashley C. Banyard, St George's Medical school, University of London- MSc course presentation, 'Influenza and One Health', 18.03.22

Dr Ashley C. Banyard, University of Sussex- MSc course presentation, 'Frontline response to incursions of avian influenza in the UK and 'One Health' aspects of influenza outbreaks, 21.03.22

Dr Ashley C. Banyard, Invited speaker for Vietnamese trade delegation UK visit, APHA: Diagnosis of Influenza virus (focussing on avian and swine influenza virus), 11.05.22

Dr Helen Everett, 2022 IBTR Symposium, Mammalian influenza risks in Europe, 26.10.2022

Dr Joe James, 2022 IBTR Symposium, Zoonotic influenza risks, 26.10.2022

Dr Joe James, BSLZnet4, Risk assessment of influenza A viruses, 29.05.22

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

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

No

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO17025	UKAS PDF	Certificate of Accreditation.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Haemagglutination Inhibition test	UKAS
Matrix (M)-gene PCR	UKAS
H1-118 (pdm09) real-time PCR	UKAS
Virus isolation in SPF eggs	UKAS
Whole Genome Sequencing	UKAS

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 2018, Chapter 3.8.7 APHA maintains a complete and functioning laboratory biological risk management system, which ensures that the laboratory is in compliance with applicable local, national (UK Health and Safety Executive), regional, and international standards and requirements for biosafety and laboratory biosecurity

TOR9: SCIENTIFIC MEETINGS

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

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 swine group meeting	2022-12-01	Online	Presenter	Detailed antigenic characterisation - update on global antigenic diversity and WHO VCM
ESFlu COST action	2022-11-01	Brussels	Participant, Management Committees UK representative	Inauguration meeting and election of Management Committee

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.
IDV ring trial organised by SVA	Participant		N/A

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
WHO VCM	We have had a close working relationship with the WOA reference laboratory in Italy to map the epidemiology of SI in Europe and ensure collaboratively we fully characterise these viruses at the genetic level which supports the OFFLU data package/advice to WHO VCM. We are also working closely with collaborators as part of the CEIRR consortium where APHA is a part of a pandemic and pre-pandemic risk pipeline for swine influenza virus. APHA is the UK participant in the PIGIE consortium, and co-lead of WP2, as detailed in section 10.	Across the OFFLU Network

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 WOAH?

Yes

KIND OF CONSULTANCY	Location	SUBJECT (FACULTATIVE)
APHA swine influenza experts contributes to and reviewed the latest version of the WOA manual.	Virtual	WOAH manual

29. Additional comments regarding your report:

Yes

We are undertaking cross reference laboratory assessment of SwIAV isolation techniques in cell culture and embryonated eggs to attempt to maximise virus recovery.