

# WOAH Reference Laboratory Reports Activities 2025

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## LABORATORY INFORMATION

<b>*Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:</b>	African swine fever
<b>*Address of laboratory:</b>	The Pirbright Institute, Ash Road, Pirbright, Woking. GU24 0NF United Kingdom of Great Britain and Northern Ireland
<b>*Tel:</b>	+441483232441
<b>*E-mail address:</b>	christopher.netherton@pirbright.ac.uk
<b>Website:</b>	<a href="https://www.pirbright.ac.uk/our-science/viruses/african-swine-fever-virus">https://www.pirbright.ac.uk/our-science/viruses/african-swine-fever-virus</a>
<b>*Name (including Title) of Head of Laboratory (Responsible Official):</b>	Professor Bryan Charleston
<b>*Name (including Title and Position) of WOAH Reference Expert:</b>	Dr Christopher Netherton
<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 WOAH Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
<b>Indirect diagnostic tests</b>			
ELISA	Yes	0	0
<b>Direct diagnostic tests</b>			
Real time PCR	Yes	28	0
Virus Isolation from historical sample	Yes	0	1

## TOR2: REFERENCE MATERIAL

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

No

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

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient WOAH Member Countries	Country of recipients
ASFV DNA panel	PCR	Provided	8 x 45ul	0	2	UNITED KINGDOM,
ASFV serum	ELISA	Provided	0	11 ml	1	CHINESE TAIPEI,
ASFV serum	ELISA	Provided	3 ml	0	1	UNITED KINGDOM,
ASFV serum	ELISA	Provided	0	1 ml	1	KOREA (REP. OF),
ASFV GI DNA	PCR	Provided	0	200 ul	1	ZAMBIA,

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ASFV GI IDNA	PCR	Provided	0	200 ul	1	ZAMBIA,
Panel of 17 ASFV isolates	Research studies	Provided	0	17 ml	1	BELGIUM,
ASFV isolate	Research studies	Provided	0	1 ml	1	CANADA,

4. Did your laboratory produce vaccines?

Not applicable

5. Did your laboratory supply vaccines to WOAHA Members?

## 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 WOAHA Standards for the designated pathogen or disease?

No

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

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

## TOR4: DIAGNOSTIC TESTING FACILITIES

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

No

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

Yes

Name of the WOAHA Member Country receiving a technical consultancy	Purpose	How the advice was provided
UNITED STATES OF AMERICA	Advice on testing algorithms	E-mail/SOPs
THAILAND	Advice on where to obtain PTs	E-mail
HONG KONG	Advice on how to obtain DNA	E-mail
ANGOLA	Confirmatory diagnosis support	E-mail

## TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	WOAHA Member Countries involved other than your country
VAX4ASF	4 years	Research in novel ASFV vaccine technologies	Spain (Severo Ochoa Center for Molecular Biology, Sabiotec, Anprogapor, INTERPORC, HIPRA, Zabala Innovation), Germany (Ludwig-Maximilians Universitaet Muenche), United Kingdom (The Pirbright Institute), Kenya (International Livestock Research Institute), Sweden (SVA Swedish Veterinary Agency), Italy (In3diagnostic srl), Netherlands (Wageningen Bioveterinary Research - WUR), Hungary (Institute for Wildlife Management and Nature Conservation of MATE University, PROPHYL), Romania (Univ. of Life Sciences from Timisoara), Poland (PIWet National	GERMANY HUNGARY ITALY KENYA POLAND ROMANIA SPAIN SWEDEN THE NETHERLANDS UNITED STATES OF AMERICA

Christopher Netherton - - UNITED\_KINGDOM

			Veterinary Research Institut) and United States (Kansas State University).	
EU PAHW: ASF-Resist	3 years	Research in host-pathogen interactions	FRANCE (Institut national de recherche pour l'agriculture, l'alimentation et l'environnement (INRAE)), SPAIN (The centre for genomic regulation), UK (The Roslin Institute)	FRANCE SPAIN

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

No

## TOR6: EPIZOOLOGICAL DATA

14. Did your Laboratory collect epidemiological data relevant to international disease control?

No

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:

There are projects to continue to sequence and analyse ASFV genomes from both historical and new samples. Some of the data has been published and the rest will be published as soon as available.

Gámbaro F, Goatley LC, Foster TJ, Tennakoon C, Freimanis GL, Van Borm S, Masiulis M, Bušauskas P, Netherton CL, Dellicour S. (2025) Exploiting Viral DNA Genomes to Explore the Dispersal History of African Swine Fever Genotype II Lineages in Europe. *Genome Biol Evol.* 2025 May 30;17(6):evaf102. <https://doi.org/10.1093/gbe/evaf102>

Tam KWS, Lau CCY, Ng TTL, Ip SM, Pun SF, Corla A, Batten C, Brackman C.J. (2025) The First African Swine Fever Viruses Detected in Wild Boar in Hong Kong, 2021-2023. *Viruses.* 17(7):896. <https://doi.org/10.3390/v17070896>

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

Priscilla YL Tng, Laila Al-Adwani, Lynnette Goatley, Raquel Portugal, Anusyah Rathakrishnan, Christopher L Netherton (2025) Early disruption of the innate-adaptive immune axis in vivo after infection with virulent Georgia 2007/1 ASFV. *Discovery Immunology*, kyaf014, <https://doi.org/10.1093/discim/kyaf014>

Tam KWS, Lau CCY, Ng TTL, Ip SM, Pun SF, Corla A, Batten C, Brackman C.J. (2025) The First African Swine Fever Viruses Detected in Wild Boar in Hong Kong, 2021-2023. *Viruses.* 17(7):896.

<https://doi.org/10.3390/v17070896>

Dupré J, Dolata KM, Pei G, Molouki A, Goatley LC, Kuchler R, Soh TK, Bosse JB, Fablet A, Le Dimna M, Karadjian G, Hirschaud E, Netherton CL, Dixon LK, Reis AL, Vitour D, Le Potier MF, Karger A, Caignard G. (2025) Exploring virus-host interactions through combined proteomic approaches identifies BANF1 as a new essential factor for African Swine Fever Virus. *Mol Cell Proteomics Jul 22:101038.* <https://doi.org/10.1016/j.mcpro.2025.101038>

Cui J, Yuan F, Qin J, Jeon JH, Yun DS, Wang T, Xu R, Cao H, Tungate AA, Netherton CL, Chen J. (2025) Membrane Expression Enhances Folding, Multimeric Structure Formation, and Immunogenicity of Viral Capsid Proteins *ACS Infect Dis Aug 8;11(8):2104-2115* <https://doi.org/10.1021/acscinfed.5c00067>

Gámbaro F, Goatley LC, Foster TJ, Tennakoon C, Freimanis GL, Van Borm S, Masiulis M, Bušauskas P, Netherton CL, Dellicour S. (2025) Exploiting Viral DNA Genomes to Explore the Dispersal History of African Swine Fever Genotype II Lineages in Europe. *Genome Biol Evol.* 2025 May 30;17(6):evaf102. <https://doi.org/10.1093/gbe/evaf102>

b) International conferences:

7

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Chris Netherton was an invited speaker on African swine fever subunit vaccines at the Vaccine and Infectious Disease Organization 50th Anniversary Celebration in Saskatoon, Canada, 22nd-23rd September 2025.

Lynnette Goatley presented a poster on Stem Cell Derived Macrophages as a Tool to Investigate Differences in Responses to African Swine Fever Virus from Different Suids at the European Society for Veterinary Virology 2nd – 5th September in Portorož, Slovenia.

Raquel Portugal talked about ASFV subunit vaccines and the results from SE1517 at 14th International Veterinary Immunology Symposium 11th -14th August in Vienna, Austria.

Chris Netherton presented a poster on immune cell dynamics at 14th International Veterinary Immunology Symposium 11th -14th August 2025 in Vienna, Austria.

Ana Luisa Reis gave a talk on A gene-modified genotype II live attenuated African swine fever virus induces cross-protection against genotype I but not against genotype IX at the Global African swine fever Research Alliance, 28th – 30th April 2025 in Rome, Italy.

Chris Netherton was an invited speaker on ASF subunit vaccines at 9th European Congress of Virology, 29th April 2025, Dubrovnik, Croatia.

Chris Netherton was an invited speaker on ASF subunit vaccines at Vaccine Innovation Forum World 2025, 21st March 2025, Shanghai.

c) National conferences:

2

Chris Netherton was an invited speaker on ASF subunit vaccines at New Technologies and Advances to tackle African Swine Fever workshop at The Roslin Institute, 28th March 2025, Edinburgh.

Laila Al-Adwani talked on Pathology Study with African Swine Fever Virus. 2025. 3rd Annual Jenner Early Researchers Symposium June 23rd 2025 in Oxford, UK.

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

1

Chris Netherton sits on the Executive Committee of the Global African swine fever Research Alliance (GARA) <https://www.ars.usda.gov/GARA/>

## 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)	
IS) 17025	UKAS 4024 16June2025	UKAS 4025 16June2025.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
ELISA	UKAS
ELISA (Antigen)	UKAS
Real-time RT-PCR (King et al)	UKAS
Real-time RT-PCR (Fernandez et al)	UKAS

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

Yes

All our management systems are built around UK legislation, some is based on WHO and WOA H, but not directly translatable as it's updated into UK law before it's applied. All facilities have their operational risk assessment and specific activity risk assessments where required. We have a process in place for reporting incidents relating to biorisk, including an investigation process and lessons learned. There is also an inspection and audit programme which monitors compliance with Biorisk related legislation including SAPO, COSHH (where it relates to human pathogens), and GM (contained use). We are inspected by the HSE as part of a proactive intervention plan, where parts of our biorisk management system are scrutinised and sampled to check compliance and we are also visited and inspected by the National Counter Terrorism Security Office (NaCTSO) to ensure any 'dual-use' materials are being held securely.

## 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?H?

Yes

Title of event	Date	location	Role (speaker, presenting poster, short communications)	Title of the work presented
Joint GARA-WOAH Webinar on the WOA?H guidelines for ASF vaccines, field evaluation and post-vaccination monitoring	2025-12-16	Online	Speaker	Joint GARA-WOAH Webinar on the WOA?H guidelines for ASF vaccines, field evaluation and post-vaccination monitoring

## TOR10: NETWORK WITH WOA?H REFERENCE LABORATORIES

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

Yes

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

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOA?H REF. LABS
African swine fever	Participant	9	All

25. Did you organise or participate in inter-laboratory proficiency tests with WOA?H 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?H Ref. Labs/ organising WOA?H Ref Lab
Harmonisation of diagnostic tests for ASFV (2024/25)	Participant	Not privy to this information	Organiser: INIA Spain

26. Did your laboratory collaborate with other WOA?H 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?H Reference Laboratories
Validation of GI/GII PCRs	Preliminary validation of GI/GII PCRs to determine their ability to correctly identify hybrids	Pirbright (UK), CSIRO (Australia), CFIA (Canada)

## TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

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

No

Participant in harmonisation of diagnostic tests for ASFV (24/25). Not privy to number of participants and so can't answer question in the template. Other participants were from Africa, Asia, Europe and the Pacific.

## TOR12: EXPERT CONSULTANTS

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

Yes

Kind of consultancy	Location	Subject (facultative)
Assistance with developing WOA?H guidelines	NA	Field surveillance post-vaccination for ASF

29. Additional comments regarding your report:

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Yes

*Dr Chris Netherton was appointed WOAHA expert for ASFV on 26th March 2025*

*Dr Carrie Batten has joined the ad hoc group to revamp the WOAHA's Register of Diagnostic Kits. The first meeting was held in late November and Dr Batten has been appointed as chair.*

*We continue to make our large collection of ASFV isolates and related reagents available on request.*

*Countries affected in Europe are obliged to use the EURL for diagnostic support and hence sample submissions to Pirbright, UK have not occurred.*

*Since the UK left the EU we are no longer privy to the full PT report provided by the EURL and therefore we are not aware of the full number of participants. We are awaiting the 25/26 ASFV PT panel.*