WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted : 24 avril 2023 18:00

Laboratory Information

Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	African swine fever virus (ASFV)
Address of laboratory:	The Pirbright Institute, Ash Road, Pirbright, Woking Surrey GU24 0NF UK
Tel.:	01483 232441
E-mail address:	https://www.pirbright.ac.uk/our-science/vector-borne-viral-diseases/non-vesicular-disease-reference-laboratory
Website:	www.pirbright.ac.uk
Name (including Title) of Head of Laboratory (Responsible Official):	Prof. Bryan Charleston, Institute Director
Name (including Title and Position) of WOAH Reference Expert:	Dr Linda Dixon, Head African swine fever virus group
Which of the following defines your laboratory? Check all that apply:	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	
Indirect diagnostic tests		Nationally	Internationally
ELISA	Yes	0	0
Direct diagnostic tests		Nationally	Internationally

Real time RTPCR	yes	74	36
Virus Isolation	yes	0	21

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 isolate Benin	PCR	Provide	0	16 x 1 ml	1	Africa
ASFV nucleic acide GI	PCR	provide	0	400 ul	3	Africa America Europe
ASFV nucleic acid GII	PCR	Provide	0	1.7 ml	5	America Asia and Pacific Europe
ASFV positive serum	ELISA	Provide	0	32 ml	2	America Asia and Pacific
p30 mAb	Elisa	Provide	0	0.5 ml	1	Europe

4. Did your laboratory produce vaccines?

No

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

No

TOR4: DIAGNOSTIC TESTING FACILITIES

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

Yes

NAME OF WOAH 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
HONG KONG	2022-03-10	Real time PCR, Virus Isolation	0	9
HONG KONG	2022-06-22	Real time PCR and VI	0	2
PHILIPPINES	2022-10-05	Real time PCR and VI	0	25

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

Yes

NAME OF THE WOAH MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
HONG KONG	Ongoing outbreak	email
PHILIPPINES	Part of ongoing twinning project	email and onsite training
KENYA	Advice on ASFV strain selection for vaccine studies	email and online meeting

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
		To control the growing LSD and ASF epidemics in	The Pirbright Institute, Sciensano, The Friedrich Loeffler Institute (FLI) Sveriges Lantbruksuniversitet (SLU) Istituto Zooprofilattico Sperimentale Della Lombardia ed Emilia Romagna (IZSLER) Agricultural Research Council (ARC) Istituto Universitario Europeo (MPC) Veterinarians san Frontieres International (SIVtro VSF ITALIA) ZOETIS IDVet Klifovet AG University of Pretoria (UP) Canadian Food Inspection Agency (CFIA) CSIRO Ministry of Rural Development and Food (MINAGRIC) Athens	

Addressing the dual emerging threats of African Swine Fever and Lumpy Skin Disease in Europe DEFEND	5 years	Europe and neighbouring countries by understanding the drivers of LSDV and ASFV emergence, and by generating research outputs which underpin novel diagnostic tools and vaccines, and authenticate appropriate and rapid responses by decision-maker	Veterinary Centre (AVC) The Jenner Institute for Vaccine Research, University of Oxford (UOXF) State Food and Veterinary Service (SFVS) Republican Veterinary Laboratory (RVL) Ministry of Agriculture, Rural Development and Water Management (MINA) Diagnostic Veterinary Laboratory (DVL) Institute for Diagnosis and Animal Health (IDAH) Central Veterinary Authority (ANSVSA) Bulgarian Food Safety Agency (BFSA) Ministry of Agriculture and Food (MAF) SS. Cyril and Methodius University Skopje (SSU) Istanbul University (IU) Ministry of Food Agriculture and Livestock (MFAL) Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA) Veterinary Specialized institute Kraljevo (VSI-K) Scientific Veterinary Institute Novi Sad (NIV-NS)	ALBANIA AUSTRALIA AZERBAIJAN BELGIUM BULGARIA CANADA FRANCE GERMANY GREECE ITALY LITHUANIA MONTENEGRO NORTH MACEDONIA (REP. OF) ROMANIA SERBIA SOUTH AFRICA SPAIN SWEDEN TURKEY UNITED KINGDOM
ICRAD Project ASFVint: Decoding a virus Achilles heel: the African swine fever virus interactome	3 year	Research in support of vaccine development and understanding disease pathogenesis	France (two Anses, INRAE), Spain (INIA), Germany (FLI), Estonia, (University of Tartu)	ESTONIA FRANCE GERMANY SPAIN UNITED KINGDOM

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:
Genome sequence analysis from 2022 submissions has been carried out and is being prepared for publication

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:

See above

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:

15
Netherton C.L., Goatley L.C., Flannery J., Ashby M., Batten C. (2022) Laboratory Diagnosis and Quantification of African Swine Fever Virus Using Real-Time Polymerase Chain Reaction. In: Netherton C.L. (eds) African Swine Fever Virus. Methods in Molecular Biology, vol 2503. Humana, New York, NY. DOI: 10.1007/978-1-0716-2333-6_6

Rajko-Nenow P., Batten C. (2022) Genotyping of African Swine Fever Virus. In: Netherton C.L. (eds) African Swine Fever Virus. Methods in Molecular Biology, vol 2503. Humana, New York, NY. DOI: 10.1007/978-1-0716-2333-6_8
Frost L., Batten C. (2022) African Swine Fever Virus Plaque Assay and Disinfectant Testing. In: Netherton C.L. (eds) African Swine Fever Virus. Methods in Molecular Biology, vol 2503. Humana, New York, NY. DOI: 10.1007/978-1-0716-2333-6_14

Cellular and Humoral Immune Responses after Immunisation with Low Virulent African Swine Fever Virus in the Large White Inbred Babraham Line and Outbred Domestic Pigs.
Goatley LC, Nash RH, Andrews C, Hargreaves Z, Tng P, Reis AL, Graham SP, Netherton CL.
Viruses. 2022 Jul 7;14(7):1487. doi: 10.3390/v14071487.
PMID: 35891467 Free PMC article.

Adaptive Cellular Immunity against African Swine Fever Virus Infections.
Schäfer A, Franzoni G, Netherton CL, Hartmann L, Blome S, Blohm U.
Pathogens. 2022 Feb 20;11(2):274. doi: 10.3390/pathogens11020274.
PMID: 35215216 Free PMC article. Review.

Novel method for sub-grouping of genotype II African swine fever viruses based on the intergenic region between the A179L and A137R genes.
Tran HTT, Truong AD, Dang AK, Ly DV, Chu NT, Van Hoang T, Nguyen HT, Netherton CL, Dang HV.
Vet Med Sci. 2022 Mar;8(2):607-609. doi: 10.1002/vms3.702. Epub 2021 Dec 29.
PMID: 34967133 Free PMC article.
2. Rathakrishnan, A., et al. (2022). "Differential effect of deleting members of African swine fever virus multigene families 360 and 505 from the genotype II Georgia 2007/1 isolate on virus replication, virulence and induction of protection." J Virol: jvi0189921
4. Cackett, G., et al. (2022). "African Swine Fever Virus and host response - transcriptome profiling of the Georgia 2007/1 strain and porcine macrophages." J Virol: jvi0193921
3. Petrovan, V., et al. (2022). "Role of African Swine Fever Virus Proteins EP153R and EP402R in Reducing Viral Persistence in Blood and Virulence in Pigs Infected with BeninDP148R." J Virol 96(1): e0134021
Books: Editor Chris Netherton: African swine fever virus: Methods and Protocols. (2022). Methods in Molecular Biology, volume 2503. Humana New York, NY. ISBN 978-1-0716-2333-6
Tom Wileman, Chris Netherton, Penny Powell. (2022) Intracellular Infectiology: Infectious Agents – Virus Factories and Mini-Organelles Generated for Virus Replication. In Encyclopaedia of Cell Biology, Second Edition https://doi.org/10.1016/B978-0-12-821618-7.00041-9

b) International conferences:

Virologie Fondamental Institute Pasteur, Oct 2022, BSI Congress Liverpool, Dec 2022, Elsevier Vaccine Congress Lake Garda Italy Sep 2022,

75th SISvet meeting Lodi Italy June 2022, GARA Meeting Dominican Republic May 2022, EPIZONE Annual Conference Barcelona Spain May 2022, European Society of Veterinary Virology Ghent Belgium, Spain Sep 2022, Global Alliance for Research on African swine fever virus (GARA) Dominican Republic May 2022 e fever virus
EPIZONE: R. Gonzalez-Gomez. ASFV multigene family proteins inhibition of interferon responses.
ESVV: Linda Dixon: Molecular basis of African swine fever virus virulence
Anusyah Rathakrishnan: A multiple gene-deleted genotype II ASFV vaccine candidate.
Josh Hui: Spatiotemporal analysis of ASFV interactions
GARA: Lynnette Goatley: ASFV subunit vaccine development
75th SISvet conference: Chris Netherton: ASFV Immunology and ASFV vaccines
Virologie Fondamental: ASFV

c) National conferences:

UK Microbiology Society, Belfast, April 2022 , BSI Congress Dec 2022
Linda Dixon: African swine fever virus adhesion proteins CD2v and EP153R: Roles in virus virulence, persistence in blood and immunogenicity
Linda Dixon: Differential effect of deleting members of African swine fever virus multigene families 360 and 505 from the genotype II Georgia 2007/1 isolate on virus replication, virulence and induction of protection in pigs.
BSI: Priscilla Tng: Antigen specific humoral responses in domestic pigs to low virulent virus vaccination against African Swine Fever

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 WOAH Members?

Yes

a) Technical visit :

b) Seminars :

c) Hands-on training courses: 1

d) Internships (>1 month)

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	Philipinnes	3

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
		Pirbright UKAS testing Schedule 2022.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 RTPCR King et al.,	UKAS
Real time RTPCR Fernandez et al.,	UKAS

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

Yes

The institute works to reduce biorisk across all areas of its work

TOR9: SCIENTIFIC MEETINGS

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

No

22. Did your laboratory participate in scientific meetings related to the pathogen in question on behalf of WOAH?

No

TOR10: NETWORK WITH WOAH REFERENCE LABORATORIES

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

Yes

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

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOAH REF. LABS/ ORGANISING WOAH REF. LAB.
Harmonisation of diagnostic tests for ASFV (2021/22)	Participant		Organiser INIA Spain. Not privvy to information from other participants

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

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOAH REF. LABS/ ORGANISING WOAH REF. LAB.
Harmonisation of diagnostic tests for ASF (21/22)	Participants	Not privvy to this information	INIA, Spain

26. Did your laboratory collaborate with other WOAH 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 WOAH Reference Laboratories for the same pathogen?

Yes

Purpose for inter-laboratory test comparisons1	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Region(s) of participating WOAH Member Countries
Harmonisation of diagnostic tests for ASF (2021/22)	Participant		Africa Asia and Pacific Europe

TOR12: EXPERT CONSULTANTS

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

Yes

KIND OF CONSULTANCY	Location	SUBJECT (FACULTATIVE)
Discussions on ASF MLV vaccine standards for approval by Biological Standards Commission	Online and via questionnaire	Contribution to forthcoming chapter on ASF modified live vaccine production and testing for Biological Standards Commission
Online workshop on surveillance for ASF in Asia and Oceana	Online	Discussion and advice regarding ASF surveillance in Asia and Oceana

29. Additional comments regarding your report:

Yes

Samples submitted from the Philippines were part of an ongoing supported WOAH twinning project. The training visit reported in TOR7 was part of this ongoing project.
Since Brexit 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.