

WOAH Reference Laboratory Reports Activities 2024

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LABORATORY INFORMATION

*Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	African swine fever
*Address of laboratory:	Foreign Animal Disease Diagnostic Laboratory, PIADC, 40550 Rt 25, Orient Point, NY11957, USA
*Tel:	+16313233287
*E-mail address:	ping.wu@usda.gov
Website:	www.aphis.usda.gov/aphis/ourfocus/animalhealth/lab-info-services
*Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Robin Holland, FADDL Director
*Name (including Title and Position) of WOAH Reference Expert:	Dr. Ping Wu, Veterinary Medical Officer
*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 WOAH Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
ASFV ELISA	Yes	8560	0

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ASFV IPT	Yes	27	0
ASFV IFA	Yes	0	0
Direct diagnostic tests		Nationally	Internationally
ASFV PCR	Yes	19711	27
ASFV VI	Yes	28	0
ASFV NGS sequencing	No	0	607

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
IPT Kit	ASFV IPT	10 Kits	1 kit	0	1	UNITED STATES OF AMERICA,

4. Did your laboratory produce vaccines?

Not applicable

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

Not applicable

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.)
ASFV-CRISPR-RPA	https://www.biorxiv.org/content/10.1101/2024.12.27.630508v1
INgezim® ASFV Combo CROM Ag/Ab Lateral Flow Assay Evaluation	On going, total 398 samples (including experimental and field samples) were evaluated for specificity and sensitivity
Aggregated oral fluid sample type for ASFV detection	on going

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

No

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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?

Yes

Name of WOA 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
DOMINICAN (REP.)	2024-01-01	NGS sequencing	656	0
BENIN	2024-12-31	PCR	4	0
BENIN	2024-02-12	NGS sequencing	4	0
UGANDA	2024-12-31	PCR	100	0
UGANDA	2024-12-31	NGS sequencing	47	0
GHANA	2024-01-03	PCR	68	0
GHANA	2024-01-03	NGS sequencing	17	0
CAMEROON	2024-04-17	PCR	40	0
CAMEROON	2024-04-17	NGS sequencing	18	0

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
DOMINICAN (REP.)	Provide technical and logistical support	In Person

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOA 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
Use NGS sequencing to characterize ASFV samples	February 12, 2024 - April 25, 2024	Use NGS sequencing to characterize ASFV samples isolated from the 2023 outbreak in Benin	Research Unit in Applied Microbiology and Pharmacology of natural substances, University of Abomey-Calavi, Abomey- Calavi, Benin	BENIN
Use NGS sequencing to characterize ASFV samples	November 11, 2023 - Present	Use NGS sequencing to characterize ASFV samples from Uganda	College of Veterinary Medicine Animal Resources and Bio Security Makerere University,	UGANDA

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			Kampala, Uganda	
Use NGS sequencing to characterize ASFV samples	June 10, 2023 – January 03, 2024	Use NGS sequencing to characterize ASFV samples from Ghana	Accra Veterinary Laboratory of Veterinary Services Directorate, Accra, Ghana	GHANA
Use NGS sequencing to characterize ASFV samples	December 6, 2024 – Present	Use NGS sequencing to characterize ASFV samples from Ghana	Accra Veterinary Laboratory of Veterinary Services Directorate, Accra, Ghana	GHANA
Use NGS sequencing to characterize ASFV samples	August 03, 2023 – April 17, 2024	Use NGS sequencing to characterize ASFV samples from Cameroon	Laboratory for Emerging Infectious Diseases and the Department of Microbiology and Parasitology, University of Buea, Buea, Cameroon	CAMEROON

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

No

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:

1. Samples were collected from domestic and feral pigs in Dominican Republic for ASF surveillance.
2. Whole genome sequencing was conducted on field specimens from the Dominican Republic ASF outbreak, information including animal location and testing data were also assembled.
3. Samples were collected from more than 99% swine premises in Puerto Rico and USVI for ASF surveillance.

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:

656 samples were collected from ASF outbreak in Dominican Republic. 607 were ASFV DNA positive. 202 were sequenced completely, and 405 samples were partially sequenced. Data analyses is ongoing.

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)

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a) Articles published in peer-reviewed journals:

6

1. Wu P, McDaniel AJ, Rodríguez YY, Blakemore L, Schumann KR, Chung CJ, Jia W. Evaluation of an in-house indirect immunoperoxidase test for detection of antibodies against African swine fever virus. *J Vet Diagn Invest.* 2024 Nov;36(6):870-873. doi: 10.1177/10406387241267883. Epub 2024 Sep 6. PMID: 39243119; PMCID: PMC11529064.
2. Borca MV, Ramirez-Medina E, Espinoza N, Rai A, Spinard E, Velazquez-Salinas L, Valladares A, Silva E, Burton L, Meyers A, Clark J, Wu P, Gay CG, Gladue DP. Deletion of the EP402R Gene from the Genome of African Swine Fever Vaccine Strain ASFV-G-ΔI177L Provides the Potential Capability of Differentiating between Infected and Vaccinated Animals. *Viruses.* 2024 Feb 28;16(3):376. doi: 10.3390/v16030376. PMID: 38543742; PMCID: PMC10974803.
3. Das A, Gutkoska J, Tadassa Y, Jia W. Enhanced Recovery and Detection of Highly Infectious Animal Disease Viruses by Virus Capture Using Nanotrap® Microbiome A Particles. *Viruses.* 2024 Oct 23;16(11):1657. doi: 10.3390/v16111657. PMID: 39599772; PMCID: PMC11599081.
4. O'Donnell V, Pierce JL, Osipenko O, Xu L, Berninger A, Lakin SM, Barrette RW, Gladue DP, Faburay B. Rapid Detection and Quick Characterization of African Swine Fever Virus Using the VolTRAX Automated Library Preparation Platform. *Viruses.* 2024 May 5;16(5):731. doi: 10.3390/v16050731. PMID: 38793613; PMCID: PMC11125638.
5. O'Donnell V, Spinard E, Xu L, Berninger A, Barrette RW, Gladue DP, Faburay B. Full-Length ASFV B646L Gene Sequencing by Nanopore Offers a Simple and Rapid Approach for Identifying ASFV Genotypes. *Viruses.* 2024 Sep 26;16(10):1522. doi: 10.3390/v16101522. PMID: 39459857; PMCID: PMC11512349.
6. Faburay, B., Fondzenyuy, Y. A., Ndip, L. M., Acha, J. K., Masalla, T. N., Kenneh, N., Esemu, S. N., Spinard, E., Borca, M. V., Xu, L., Berninger, A., O'Donnell, V., & Gladue, D. P. Complete African Swine Fever Virus Genome Isolated from the 2023 Outbreak in Cameroon. Status: Under Review

b) International conferences:

1

North American African Swine Fever Forum, Ottawa, Canada September 17 - 19, 2024

c) National conferences:

1

1. ASM Microbe 2024 Conference, Atlanta, Georgia, June 13-17, 2024

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

0

0

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

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

Yes

a) Technical visit : 0

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b) Seminars : 0

c) Hands-on training courses: 4

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	UNITED STATES OF AMERICA	100

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 17043, ISO 9001	Certificate in PDF format	2526-04 2024.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
ASF Ab-ELISA, IP, PCR, VI	American Association for Laboratory Accreditation (A2LA)

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

Yes

Biosafety and biosecurity management program

TOR9: SCIENTIFIC MEETINGS

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

No

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

No

TOR10: NETWORK WITH WOAHP REFERENCE LABORATORIES

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

Yes

24. Do you network (collaborate or share information) with other WOAHP Reference Laboratories designated for the same pathogen?

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOAHP REF. LABS
			USDA, APHIS, VS, NVSL, Foreign Animal Disease Diagnostic Laboratory National Centre for Foreign Animal Disease,

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WOAH RL-ASF Network/ASF	Participant	7	Canadian Food Inspection Agency The Pirbright Institute Centro de Vigilancia Sanitaria Veterinaria (VISAVET) Facultad de Veterinaria HCV Planta sótano Universidad Complutense de Madrid (UCM) CSIRO Australian Centre for Disease Preparedness Onderstepoort Veterinary Institute National Surveillance and Research Center for Exotic Animal Diseases China Animal Health and Epidemiology Center
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25. Did you organise or participate in inter-laboratory proficiency tests with WOAH 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 WOAH Ref. Labs/ organising WOAH Ref Lab
ASF Interlaboratory Comparison Test, CISA-INIA	Participant	1	CISA-INIA

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?

Not applicable (only WOAH Reference Laboratory designated for the disease)

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 during the past 2 years?

Yes

Purpose for inter-laboratory test comparisons ¹	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAH Member Countries
ASFV PCR	Organizer	43	ASFV qPCR	UNITED STATES OF AMERICA,

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

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No