WOAH Reference Laboratory Reports Activities 2023

Activities in 2023

This report has been submitted : 3 juillet 2024 21:57

Laboratory Information

Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	bovine viral diarrhea
Address of laboratory:	P.O. Box 640 Township Road 9-1 Lethbridge, Alberta T1J 3Z4 CANADA
Tel.:	204-789-2014
E-mail address:	oliver.lung@inspection.gc.ca
Website:	
Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Kingsley Amoako, Director, Canadian Food Inspection Agency, National Centres for Animal Disease, Lethbridge Laboratory
Name (including Title and Position) of WOAH Reference Expert:	Dr. Oliver Lung, Research Scientist/Head, Genomics Unit, Canadian Food Inspection Agency, National Centre for Foreign Animal Disease
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
BVD-SN		3894	0
Border Disease-IP		162	0
Direct diagnostic tests		Nationally	Internationally
BVD-Isolation		276	0
BVD-IP		2874	0

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
BVDV mAb pool	BVD-IP	produced	2ml	0	1	CANADA,

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?

Yes

NAME OF THE NEW TEST OR DIAGNOSTIC METHOD DEVELOPED	DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)
sequencing of BVDV, CSFV	manuscript in preparation; High-throughput sequencing for species authentication and contamination detection of 63 cell lines (https://www.nature.com/articles/s41598-021-00779-5); Molecular and Pathological Characterization of Classical Swine Fever Virus Genotype 2 Strains Responsible for the 2013–2018 Outbreak in Colombia (https://www.mdpi.com/1999-4915/15/12/2308)

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?

No

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
EGYPT	Request for reference antisera	email and pending
AUSTRALIA	Request for information on BVDV mAbs	email
CANADA	Advice on IBR-ISOl test results	email

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
Mpox exposure and transmission at the human-animal interface; a One Health approach to viral ecology	3	The primary objectives are to a) determine the risk of mpox spillover into Canadian wildlife, 2) delineate the viral ecology of mpox in endemic regions, 3) identify mitigation measures for spillover at the human-animal interface and 4) enable global capacity building for surveillance and knowledge transfer.	Sunnybrook Health Sciences Centre & Research Inst, Canada; Trent University, Canada; Université de Montréal; University of Ilorin, Nigeria; University of Guelph; Dalhousie University, Canada; Accra Veterinary Laboratory, Ghana	CANADA GHANA NIGERIA
High consequence emerging viral diseases of swine in Caribbean region	3	. The main objective of this proposal is to Identify and characterize high consequence viral pathogens from swine herds in the Caribbean countries	Centro Nacional de Sanidad Agropecuaria (CENSA) Laboratory, Cuba	CUBA
viral metagenomics in cattle	ongoing	detection and characterization of known, novel and unexpected viruses	Animal Health Laboratory Ministry of Primary Industries	NEW ZEALAND

Molecular and pathological characterization of CSFV strains responsible for the 2013-2018 outbreak in Colombia	2	Molecular and pathological characterization of CSFV strains responsible for the 2013-2018 outbreak	National Veterinary Laboratory, Instituto Colombiano Agropecurio, Bogota 110911, DC, Colombia	COLOMBIA
Characterization of a Novel African Swine Fever Virus p72 Genotype II from Nigeria	2	Characterization of a Novel African Swine Fever Virus p72 Genotype II from Nigeria	College of Natural Resources (CoNAS), Makerere University, Kampala, Uganda; National Veterinary Research Institute, Vom, Nigeria	NIGERIA UGANDA

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

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:
passive surveillance was conducted

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:
reports are submitted to the Canadian Food Inspection Agency on a regular basis

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:

9

1. Alkie et al., 2023. Characterization of neurotropic HPAI H5N1 viruses with novel genome constellations and mammalian adaptive mutations in free-living mesocarnivores in Canada. Emerging Microbes & Infections 12(1):2186608. DOI: 10.1080/22221751.2023.2186608. Coauthor.
2. Fisher et al., 2023. Discovery and comparative genomic analysis of a novel equine anellovirus, representing the first complete Mutorquevirus genome. Scientific Reports 13(3703):1-10. DOI: 10.1038/s41598-023-30875-7. Senior and Corrseponding Author.
3. Pickering, Lung, Finlay et al., 2023. Divergent SARS-CoV-2 variant emerges in white-tailed deer with deer-to-human transmission. Nature Microbiology 8(1):1-1. DOI: 10.1038/s41564-022-01298-3. Co-first author.
4. Ambagala et al. (2023) Characterization of a Novel African Swine Fever Virus p72 Genotype II from Nigeria. Viruses 15, 915: 1-13, DOI: 10.3390/v15040915. Co- author.
5. Domshay et al. (2023) Adenoviral hemorrhagic disease in a farmed elk (Cervus canadensis) in Alberta, Canada. Canadian Veterinary Journal 64(6):524-528. Co-author.
6. Jakobek et al. (2023) Characterization of influenza A (H5N1) infections in two free-ranging black bears (Ursus americanus) from Quebec, Canada. Emerging and Infectious Disease, Volume 29, Number 10, DOI: 10.3201/eid2910.230548. Co-author.
7. Rudar et al. Sequence Signatures Within the Genome of SARS-CoV-2 Can be Used to Predict Host-Type. Microbiology Spectrum12(4) DOI: 10.1128/spectrum.03584-23. Senior Author.
8. Alkie et al. (2023) Recurring Trans-Atlantic Incursion of Clade 2.3.4.4b H5N1 Viruses by Long Distance Migratory Birds from Northern Europe to Canada in 2022/2023. Viruses 15, 1836, DOI: 10.3390/v15091836. Co-author.
9. Kotwa et al. (2023) Genomic and transcriptomic characterization of Delta SARS-CoV-2 infection in free-ranging white-tailed deer (Odocoileus virginianus). iScience 26(11), DOI: 10.1016/j.isci.2023.108319. Co-author.

b) International conferences:

0

c) National conferences:

0

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

1
Annual reports are submitted to the Canadian Food Inspection Agency

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 : 1

b) Seminars : 1

c) Hands-on training courses: 0

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
A	GHANA	1

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO17025:2017	pdf	2023.09.29 ASB_CTF_15366-CFIA-Certificate_v4.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Bovine Viral Diarrhea(BVD) virus-Immunoperoxidase Monolayer	Standards Council of Canada (SCC)
Bovine Viral Diarrhea(BVD) virus-Virus Isolation	Standards Council of Canada (SCC)
Bovine Viral Diarrhea(BVD) virus-Serum Neutralization	Standards Council of Canada (SCC)

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

TOR9: SCIENTIFIC MEETINGS

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

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

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOAH REF. LABS
Bovine Viral Diarrhea	Participant	4	Australia, UK, Germany, Canada

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

No

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	Name of the Test	WOAH Member Countries
Proficiency and quality assurance	recipient of proficiency test panel	1	BVD-IP	CANADA,

TOR12: EXPERT CONSULTANTS

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

Yes

KIND OF CONSULTANCY	Location	SUBJECT (FACULTATIVE)
chapter 3.4.7 renewal	remote	updating BVD Chapter in the terrestrial manual
advice on tests and reagents	remote	provided as needed

29. Additional comments regarding your report:

No