

WOAH Reference Laboratory Reports Activities 2023

Activities in 2023

This report has been submitted : 10 juin 2024 21:25

Laboratory Information

Name of disease (or topic) for which you are a designated WOAHO Reference Laboratory:	Bovine spongiform encephalopathy
Address of laboratory:	P.O. Box 640 Township Road 9-1 Lethbridge Alberta T1J 3Z4 CANADA
Tel.:	+1-403 3825505
E-mail address:	waqas.tahir@inspection.gc.ca
Website:	https://www.inspection.gc.ca/eng/1297964599443/1297965645317
Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Kingsley Amoako, Director, Canadian Food Inspection Agency National Centre for Animal Diseases, Lethbridge Laboratory.
Name (including Title and Position) of WOAHO Reference Expert:	Dr. Waqas Tahir, Research Scientist and Head, Canadian National BSE Reference Laboratory CFIA-NCAD Lethbridge Laboratory
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	
		Nationally	Internationally
Indirect diagnostic tests			
0		0	0
Direct diagnostic tests			
BioRad TeSeE ELISA		3035	1
BioRad Confirmatory Western Blot		0	1
OIE Immunoblot		0	0
BSE IHC		0	0

TOR2: REFERENCE MATERIAL

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

No

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

Yes

TYPE OF REAGENT AVAILABLE	RELATED DIAGNOSTIC TEST	PRODUCED/ PROVIDE	AMOUNT SUPPLIED	AMOUNT SUPPLIED INTERNATIONALLY	NO. OF RECIPIENT WOAHO MEMBER	COUNTRY OF RECIPIENTS
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			NATIONALLY (ML, MG)	(ML, MG)	COUNTRIES	
FFPE BSE positive bovine brain tissue blocks	Histology/IHC	4	0	4 paraffin embedded blocks to Brazil Nov 2023	2	BRAZIL,

4. Did your laboratory produce vaccines?

No

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

No

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?

No

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
Peroral intraspecies transmission of atypical BSE	14 Years	Risk assessment & improved understanding of pathogenesis	Friedrich-Loeffler Institute	GERMANY
Intracranial species transmission of 2 unusual BSE cases	8 Years	Risk assessment	Vetsuisse, University of Berne	SWITZERLAND
Identifying genetic factors affecting BSE incubation and presentation in cattle	4 Years	Improved understanding of pathogenesis	Friedrich-Loeffler Institute, Animal & Plant Health Agency UK	GERMANY UNITED KINGDOM

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?

No

15. Did your laboratory disseminate epidemiological data that had been processed and analysed?

No

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:

1

Article Published: *Loss of small GTPase Rab7 activation in prion infection negatively affects a feedback loop regulating neuronal cholesterol metabolism (Published: 2023).*

Authors: Pearl Cherry, Li Lu, Su Y Shim, Vincent Ebacher, Waqas Tahir, Hermann Schaetzl, Samia Hannaoui, Sabine Gilch

Journal: *Journal of Biological Chemistry*

Details: *This article highlights the significant involvement of aberrant Rab7 function in prion infection at different stages, and the implications of its loss in function, reflected by the impairments in LDL trafficking, which culminates in an upregulated cellular cholesterol metabolism in prion-infected neuronal cells.*

b) International conferences:

1

Conference: *Prion 2023, Lisbon, Portugal.*

Abstract Title: *Transmission of atypical BSE: a possible origin of Classical BSE in cattle*

Authors: Sandor Dudas, Samuel James Sharpe, Kristina Santiago-Mateo, Stefanie Czub, , Waqas Tahir

Details: *The results in this project confirm that infectious prions from H and L type BSE can be taken up by the gut and eventually found in the brains of orally challenged BSE steers with biochemical properties similar to that of C- BSE.*

c) National conferences:

1

Event: *CFIA, R&D symposium 2023 (virtual)*

Title of presentation: *Transmission of atypical BSE: a possible origin of Classical BSE in cattle*

Presenter: *Waqas Tahir*

Details: *The results in this project confirm that infectious prions from H and L type BSE can be taken up by the gut and eventually found in the brains of orally challenged BSE steers with biochemical properties similar to that of C- BSE.*

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 WOAHA 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)	
ISO 17025	pdf	2023.10.16 ASB_Scope Of Accreditation_15366.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Bio Rad TeSeE ELISA	Standard Councils of Canada (SCC)
SAF/OIE Immunoblot	Standard Councils of Canada (SCC)

BSE Immunohistochemistry	Standard Councils of Canada (SCC)
BSE hemotoxylin and eosin (H&E)	Standard Councils of Canada (SCC)
Hybrid Western Blot	Standard Councils of Canada (SCC)

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

Yes

Our lab is certified under License # L-R2-51780-23-PI-00 from Public Health Agency of Canada (PHAC), to work with the pathogen and the disease concerned.

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
Bovine Spongiform Encephalopathy	Organizer	1	Swiss Reference lab for BSE

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

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOAHP REF. LABS/ ORGANISING WOAHP REF. LAB.
Verify technicians and lab proficiency: BSE IHC	ORGANISER	2	none other than the Canadian BSE Reference Laboratory
Verify technicians and lab proficiency: BSE Rapid Tests	PARTICIPANT	unknown	Friedrich-Loeffler Institute
Verify technicians and lab proficiency: BSE IHC	PARTICIPANT	unknown	Friedrich-Loeffler Institute

26. Did your laboratory collaborate with other WOAHP 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 WOAHP REFERENCE LABORATORIES
Intraspecies transmission of unusual BSE cases	risk assessment and improved understanding of pathogenesis	Vetsuisse, University of Berne, Switzerland

TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOAHP Reference Laboratories for the same pathogen?

Yes

Purpose for inter-laboratory test comparisons ¹	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the Test	WOAHP Member Countries
Verify technicians and lab proficiency: BSE Rapid Tests	ORGANIZER	9	Bio Rad TeSeE ELISA	AUSTRALIA, BRAZIL, CANADA,

Validation of laboratory proficiency and diagnostic assays for the detection of BSE (IHC)

ORGANIZER/PARTICIPANT

3

BSE IHC

BRAZIL, CANADA,
GERMANY,

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

No