

# WOAH Reference Laboratory Reports Activities 2024

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## LABORATORY INFORMATION

<b>*Name of disease (or topic) for which you are a designated WOA Reference Laboratory:</b>	Bovine spongiform encephalopathy
<b>*Address of laboratory:</b>	P.O. Box 640 Township Road 9-1 Lethbridge Alberta T1J 3Z4 CANADA
<b>*Tel:</b>	+1-403 3596830
<b>*E-mail address:</b>	waqas.tahir@inspection.gc.ca
<b>Website:</b>	<a href="https://www.inspection.gc.ca/eng/1297964599443/1297965645317">https://www.inspection.gc.ca/eng/1297964599443/1297965645317</a>
<b>*Name (including Title) of Head of Laboratory (Responsible Official):</b>	Dr. Kingsley Amoako, Director, Canadian Food Inspection Agency National Centre for Animal Diseases, Lethbridge Laboratory
<b>*Name (including Title and Position) of WOA Reference Expert:</b>	Dr. Waqas Tahir, Research Scientist and Head, Canadian National BSE Reference Laboratory CFIA-NCAD Lethbridge Laboratory
<b>*Which of the following defines your laboratory? Check all that apply:</b>	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 WOA Manual	
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**Waqas Tahir - - CANADA**

	(Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
0		0	0
Direct diagnostic tests		Nationally	Internationally
BioRad TeSeE ELISA	Yes	2532	0
OIE Immunoblot	Yes	1	0
BSE IHC	Yes	1	0
BioRad Confirmatory Western Blot	No	0	0

## TOR2: REFERENCE MATERIAL

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

No

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

No

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

**Waqas Tahir - - CANADA**

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
Peroral intraspecies transmission of atypical BSE	15	Risk assessment & improved understanding of pathogenesis	Friedrich-Loeffler Institute	GERMANY
Intracranial species transmission of 2 unusual BSE cases	9	Risk assessment	Vetsuisse, University of Berne	SWITZERLAND

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

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: Extraneural infection route restricts prion conformational variability and attenuates the impact of quaternary structure on infectivity (Published 2024)*

*Authors: Sheng Chun Chang, Maria Immaculata Arifin, Waqas Tahir, Keegan John McDonald, Doris Zeng, Hermann M Schatzl, Samia Hannaoui, Sabine Gilch*

*Journal: PLoS Pathogen*

*Details: This article highlights that extraneural infection mitigates the impact of PrPSc quaternary structure on infection and reduces conformational variability of PrPSc propagated in the brain. These findings may have implications related to the evolution of stable CWD strains during natural, extraneural transmissions.*

b) International conferences:

0

c) National conferences:

1

*Event: CAHLN meeting 2024, Ottawa, Canada**Title: Origin of the Canadian BSE case 20: Unraveling the Mystery**Presenter: Dr. Waqas Tahir**Details: This presentation highlighted the results focusing on the role of various genetic risk factors contributing to the onset of atypical cases of BSE such as H-BSE in this case.*

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	asb_soa_15366_scope_v6_2024.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-R2-51780-24-TO-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 WOA?H?

No

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

No

## 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. Do you network (collaborate or share information) with other 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
Bovine Spongiform Encephalopathy	Organizer	1	Swiss Reference lab for BSE

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
Verify technicians and lab proficiency: BSE IHC	ORGANISER	2	Canadian BSE Reference Laboratory
Verify technicians and lab proficiency: BSE Rapid Tests	PARTICIPANT	unknown	Friedrich-Loeffler Institute, Germany
Verify technicians and lab proficiency: BSE IHC	PARTICIPANT	unknown	Friedrich-Loeffler Institute, Germany
Verify technicians and lab proficiency: SAF Immunoblot and Hyb-WB	PARTICIPANT	unknown	Friedrich-Loeffler Institute, Germany

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
Intraspecies transmission of unusual BSE cases	risk assessment and improved understanding of pathogenesis	Vetsuisse, University of Berne, Switzerland

## TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

## Waqas Tahir - - CANADA

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

Yes

Purpose for inter-laboratory test comparisons <sup>1</sup>	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAH Member Countries
Verify technicians and lab proficiency: BSE Rapid Tests	ORGANIZE and PARTICIPANT	9	Bio Rad TeSeE ELISA	AUSTRALIA, BRAZIL, CANADA,
Validation of laboratory proficiency and diagnostic assays for the detection of BSE (IHC)	ORGANIZER and PARTICIPANT	3	BSE IHC	BRAZIL, CANADA, GERMANY,

## TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

No