World Organisation for Animal Health

Gordon Mitchell - - CANADA

WOAH Reference Laboratory Reports Activities 2025

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LABORATORY INFORMATION

***Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:**	Chronic wasting disease
***Address of laboratory:**	3851 Fallowfield Road, Ottawa, Ontario, K2J 4S1, CANADA
***Tel:**	+1-343 212 02 72
***E-mail address:**	gordon.mitchell@inspection.gc.ca
Website:	www.inspection.gc.ca
***Name (including Title) of Head of Laboratory (Responsible Official):**	Dr. Charles Nfon, Laboratory Network Director, Animal Health, CFIA
***Name (including Title and Position) of WOAH Reference Expert:**	Dr. Gordon Mitchell, Head, National and WOAH Reference Laboratory for Scrapie and CWD
***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
Direct diagnostic tests		Nationally	Internationally
PrP ELISA	Yes	3776	0
PrP Immunohistochemistry	Yes	1286	0
PrP Western Blot	Yes	454	0
PRNP Genotyping	No	2306	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
Tissue Homogenates	PRNP Genotyping	Provide	None	Multiple	1	UNITED STATES OF AMERICA,

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAH Members?

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?

9. Did your laboratory validate vaccines according to WOAH Standards for the designated pathogen or disease?

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
UNITED STATES OF AMERICA	Diagnostics, genetics, transmission	Virtual meetings
FRANCE	Diagnostic reference materials	Virtual meeting, 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
Investigating CWD transmission	Ongoing	Characterizing transmission of Korean and Canadian CWD Isolates	Animal and Plant Quarantine Agency	KOREA (REP. OF)
Emerging CWD	2023-2029	CWD prions from Norwegian Cervids: Assessing the pathogenesis, shedding, spillover and zoonotic potential	NVI, INRAe, NMBU, IRCCS, ISS, CSU, INIA, UiT, UMN	FRANCE ITALY NORWAY SPAIN UNITED STATES OF AMERICA
Genetic approaches and tools to prevent, control, and eradicate TSEs	Ongoing	Developing genetic and diagnostic tools to manage CWD	Washington State University, USDA	UNITED STATES OF AMERICA

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:
Data arising from all surveillance and disease investigation-associated diagnostic testing is collected.

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:

Case data from all disease positive herds or regions is collated and communicated to regulatory agencies.

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:

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Pilot W, Arifin MI, Staskevicius A, Haley NJ, Mitchell G, Guan J. White-Tailed Deer Prion Protein Gene Variability Suggests Selection Against Chronic Wasting Disease in Canada's Prairies. Viruses. 2025; 17(8):1121. https://doi.org/10.3390/v17081121

Myskiw J, Lamoureux L, Frost K, Fox R, Slota JA, Mitchell G, Bailey-Elkin BA, Booth SA. Transmission and Characterization of Creutzfeldt–Jakob Disease and Chronic Wasting Disease in the North American Deer Mouse. Viruses. 2025; 17(4):576. https://doi.org/10.3390/v17040576

Park K, Park H, Lee Y, Mitchell G, Choi YP, Sohn H. 2025. Detection of chronic wasting disease prions in the farm soil of the Republic of Korea. mSphere 10: e00866-24. https://doi.org/10.1128/msphere.00866-24

Park, KJ, Park, HC, Lee, YR, Roh, IS, Mitchell, G, Choi, YP, & Sohn, HJ. (2025). Addressing chronic wasting disease in Korean farms: topsoil removal and 2N NaOH treatment before cervid restocking. Prion, 19(1), 20–27. https://doi.org/10.1080/19336896.2025.2527588

b) International conferences:

5

Gresch S, Morrill T, Ellis-Cramer M, Arifin M, Frank L, Bartz J, Schwabenlander M, Wolf T, Mitchell G, Guan J, Larsen P. Prion Seeding Activity in DNA Extractions: Implications for Laboratory Biosafety. Prion 2025 Conference, Rio De Janeiro, Brazil, 2025.

Ernst S, Mohamed FA, Keller M, Mitchell G, Gavier-Widen D, Benestad S, Houston EF, Groschup MH, Sharif M, Fast C. Animal prion strains around the globe. Prion 2025 Conference, Rio De Janeiro, Brazil, 2025.

Bruno R, Riccardi G, D'Agostino C, Giovannelli M, Batocchi V, Chiappini B, Pirisinu L, Vanni I, Marcon S, Richt J, Kunkle R, Mitchell G, Agrimi U, Nonno R, Di Bari MA. Evidence of a single vole-adapted strain from North American CWD isolates in vole carrying methionine at PrPC codon 109. 13th Iberian Congress on Prions, Porto, Portugal, 2025.

Fernández-Borges N, Canoyra S, Benestad S, Andreoletti O, Mitchell G, Balachandran A, Villa-Díaz A, Prieto I, Torres JM, Espinosa JC. Strain Diversity and Cross-Species Transmission Potential of Chronic Wasting Disease Prions to Livestock-Species. 13th Iberian Congress on Prions, Porto, Portugal, 2025.

Mousel M, Mitchell G, Raihan T, Schneider D, Chung C. Genomic regions outside of PRNP associate with Scrapie in domestic sheep. International Plant and Animal Genome Conference, San Diego, CA, 2025.

c) National conferences:

1

Renaud L, Morrill T, Arifin MI, Ogunremi D, Adam B, Soutyrine A, Guan J, Mitchell G, Aider M, Zhang W, Huang H. Investigation of the effects of electro-activated liquid chemicals on the inactivation of abnormal prion protein. Health Canada Science Forum, Ottawa, Canada, 2025.

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

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Center for Infectious Disease Research and Policy (CIDRAP), University of Minnesota. Chronic Wasting Disease Spillover Preparedness and Response: Charting an Uncertain Future. 2025 Jan 8. Available at: https://www.cidrap.umn.edu/chronic-wasting-disease/cwd-report-2025

Information on CWD in Canada: https://inspection.canada.ca/en/animal-health/terrestrial-animals/diseases/reportable/cwd

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAH 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/IEC 17025:2017	ASB_CTF_15367-CFIA-Certificate_v2_2022-08-29.pdf	ASB_CTF_15367-CFIA-Certificate_v2_2022-08-29.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
PrP Immunohistochemistry	Standards Council of Canada (SCC)
PrP ELISA	SCC
PrP Western blot	SCC
PRNP Genotyping	SCC

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

Yes

The Ottawa Laboratory Fallowfield, Canadian Food Inspection Agency, has a dedicated Biosafety Officer who manages the biosafety, biocontainment, biosecurity, and health and safety portfolios for the laboratory. The OLF holds valid Human Pathogens and Toxins Act (HPTA) licences, administered by the Public Health Agency of Canada, for all of the facilities where work with regulated materials is performed. As a condition of the licences, OLF must ensure compliance with the Canadian Biosafety Standard, which details the physical and operational requirements for Containment Level 2 and 3 laboratories, including Prion facilities. As well, many of the activities at OLF are further regulated by the CFIA’s Office of Biohazard Containment and Safety. In order to demonstrate compliance to both these regulatory bodies, the Biosafety Officer regularly submits performance and verification testing results for the recertification of the containment facilities, and participates in on-site inspections by the federal biosafety regulators.

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

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOAH REF. LABS
Chronic Wasting Disease	Participant	2	Norwegian Veterinary Institute, Canadian Food Inspection Agency

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?

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?

Yes

Title of the project or contract	Scope	Name(s) of relevant WOAH Reference Laboratories
Interspecies transmission of CWD	Characterizing transmission of Korean and Canadian CWD Isolates	Animal and Plant Quarantine Agency, Republic of Korea
Emerging CWD	Pathogenesis and shedding of CWD in reindeer	Norwegian Veterinary Institute

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 comparisons1	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAH Member Countries
PrP Immunohistochemistry proficiency testing	Organizer	3	PrP Immunohistochemistry	CANADA, UNITED STATES OF AMERICA,
PrP ELISA proficiency testing	Organizer	6	PrP ELISA	CANADA,
PRNP Genotyping proficiency testing	Organizer	2	PRNP Genotyping	CANADA,

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

No