

OIE Reference Laboratory Reports Activities

Activities in 2019

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Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Chronic wasting disease
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Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Nancy Rheault, Executive Director, Ontario Laboratories Network, Canadian Food Inspection Agency
Name (including Title and Position) of OIE Reference Expert:	Dr. Gordon Mitchell, Head, National and OIE Reference Laboratory for Scrapie and CWD
Which of the following defines your laboratory? Check all that apply:	Governmental

ToR 1: To use, promote and disseminate diagnostic methods validated according to OIE Standards

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 OIE Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests			
0	0	0	0
Direct diagnostic tests			
PrP ELISA		3002	3
PrP Immunohistochemistry		2178	3
PrP Western Blot		150	3
PRNP Genotyping		2114	2

ToR 2: To develop reference material in accordance with OIE requirements, and implement and promote the application of OIE Standards. To store and distribute to national laboratories biological reference products and any other reagents used in the diagnosis and control of the designated pathogens or disease.

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

No

3. Did your laboratory supply standard reference reagents (non OIE-approved) and/or other diagnostic reagents to OIE Member Countries?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient OIE Member Countries	Region of recipients
Tissue homogenates	PrP ELISA	Provide	Multiple	Multiple	3	<input type="checkbox"/> Africa <input checked="" type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Tissue blocks	PrP Immunohistochemistry	Provide	Multiple	Multiple	3	<input type="checkbox"/> Africa <input checked="" type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
DNA extracts	PRNP Genotyping	Provide	Multiple	Multiple	2	<input type="checkbox"/> Africa <input checked="" type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to OIE Member Countries?

No

ToR 3: To develop, standardise and validate, according to OIE Standards, new procedures for diagnosis and control of the designated pathogens or diseases

6. Did your laboratory develop new diagnostic methods validated according to OIE Standards for the designated pathogen or disease?

No

7. Did your laboratory develop new vaccines according to OIE Standards for the designated pathogen or disease?

No

ToR 4: To provide diagnostic testing facilities, and, where appropriate, scientific and technical advice on disease control measures to OIE Member Countries

8. Did your laboratory carry out diagnostic testing for other OIE Member Countries?

Yes

Name of OIE Member Country seeking assistance	Date (month)	No. samples received for provision of diagnostic support	No. samples received for provision of confirmatory diagnoses
BRAZIL	November	2	0

9. Did your laboratory provide expert advice in technical consultancies on the request of an OIE Member Country?

Yes

Name of the OIE Member Country receiving a technical consultancy	Purpose	How the advice was provided
PERU	Immunohistochemistry and western blot testing methods	Email, in loco
BRAZIL	Immunohistochemistry testing	Email
UNITED STATES OF AMERICA	Species susceptibility, diagnostic testing	Email
NORWAY	CWD strain studies, diagnostic testing	Email

ToR 5: To carry out and/or coordinate scientific and technical studies in collaboration with other laboratories, centres or organisations

10. Did your laboratory participate in international scientific studies in collaboration with OIE Member Countries other than the own?

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	OIE Member Countries involved other than your country
Investigating cross-species transmission of CWD	Ongoing	Characterize transmission of Korean and Canadian CWD Isolates	Animal and Plant Quarantine Agency	KOREA (REP. OF)
Characterization of CWD isolates	Ongoing	Investigating variability between CWD isolates	Norwegian Veterinary Institute, Colorado State University	FRANCE ITALY NORWAY UNITED STATES OF AMERICA
Genetics of CWD susceptibility in deer	2 years	Estimate relative susceptibility to CWD in deer of different genotypes	Midwestern University, United States Department of Agriculture	UNITED STATES OF AMERICA
Cross-validation of an antemortem CWD test	2 years	Advance live animal test development for CWD	Midwestern University, United States Department of Agriculture	UNITED STATES OF AMERICA
Identification of microRNA signatures as biomarkers of CWD in elk	Ongoing	Identification of biomarkers of CWD in live animals	University of Texas Health Science Center at Houston	UNITED STATES OF AMERICA

ToR 6: To collect, process, analyse, publish and disseminate epizootiological data relevant to the designated pathogens or diseases

11. Did your Laboratory collect epizootiological data relevant to international disease control?

Yes

If the answer is yes, please provide details of the data collected:

Positive cases are characterized based on data combined from confirmatory testing.

12. Did your laboratory disseminate epizootiological data that had been processed and analysed?

Yes

If the answer is yes, please provide details of the data collected:

Data on positive cases is collated and communicated to regulatory agencies.

**13. What method of dissemination of information is most often used by your laboratory?
(Indicate in the appropriate box the number by category)**

a) Articles published in peer-reviewed journals: 2

Slota JA, Medina SJ, Klassen M, Gorski D, Mesa CM, Robertson C, Mitchell G, Coulthart MB, Pritzkow S, Soto C, Booth SA. Identification of circulating microRNA signatures as potential biomarkers in the serum of elk infected with chronic wasting disease. *Sci Rep.* 2019;9(1):19705.

Haley NJ, Merrett K, Buros Stein A, Simpson D, Carlson A, Mitchell G, Staskevicius A, Nichols T, Lehmkuhl AD, Thomsen BV. Estimating relative CWD susceptibility and disease progression in farmed white-tailed deer with rare PRNP alleles. *PLoS One.* 2019;14(12):e0224342.

b) International conferences: 3

Walther I, Staskevicius A, Soutyrine A, Mitchell G. Diagnosis of CWD in a herd of farmed red deer. Annual meeting - PRION 2019, Edmonton, Canada, 2019.

McAllister TA, Xu S, Abeysekara S, Dudas S, Mitchell G, Czub S. Biodegradation of BSE prions in compost. Annual meeting - Prion 2019, Edmonton, Canada, 2019.

Arifin MI, Hannaoui S, Huang Y-H, Mitchell G, Staskevicius A, Kaczmarczyk L, Jackson W, Gilch S. Caribou Prnp polymorphism distribution in Canada and its impact on CWD pathogenesis. Annual meeting - Prion 2019, Edmonton, Canada, 2019.

c) National conferences: 0

d) Other:

(Provide website address or link to appropriate information) 0

ToR 7: To provide scientific and technical training for personnel from OIE Member Countries

To recommend the prescribed and alternative tests or vaccines as OIE Standards

14. Did your laboratory provide scientific and technical training to laboratory personnel from other OIE Member Countries?

Yes

a) Technical visits: 2

b) Seminars: 0

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	Peru	2

ToR 8: To maintain a system of quality assurance, biosafety and biosecurity relevant for the pathogen and the disease concerned

15. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
ISO 17025	ASB_CTF_15367-CFIA-Certificate_v1_2017-07-24.pdf

16. 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

17. 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, Chapter 1.1.4)

ToR 9: To organise and participate in scientific meetings on behalf of the OIE

18. Did your laboratory organise scientific meetings on behalf of the OIE?

Yes

National/ International	Title of event	Co-organiser	Date (mm/yy)	Location	No. Participants
International	International Workshop on Rabies and TSEs	SENASA	09/19	Lima, Peru	25

19. Did your laboratory participate in scientific meetings on behalf of the OIE?

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
International Workshop on Rabies and TSEs	09/19	Lima, Peru	Speaker	TSE Surveillance and Control in Canada; Future Prospects for TSE Diagnostics.

ToR 10: To establish and maintain a network with other OIE Reference Laboratories designated for the same pathogen or disease and organise regular inter-laboratory proficiency testing to ensure comparability of results

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

Yes

21. Was your laboratory involved in maintaining a network with OIE Reference Laboratories designated for the same pathogen or disease by organising or participating in proficiency tests?

No

22. Did your laboratory collaborate with other OIE 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 OIE Reference Laboratories
Investigating cross-species transmission of CWD	Characterizing transmission of Korean and Canadian CWD isolates	Animal and Plant Quarantine Agency, Republic of Korea
Collaborative framework concerning CWD reference laboratories	Advance strategies to detect and control CWD	Norwegian Veterinary Institute

ToR 11: To organise inter-laboratory proficiency testing with laboratories other than OIE Reference Laboratories for the same pathogens and diseases to ensure equivalence of results

23. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than OIE Reference Laboratories for the same disease?

Yes

Note: See Interlaboratory test comparisons in: Laboratory Proficiency Testing at:
<http://www.oie.int/en/our-scientific-expertise/reference-laboratories/proficiency-testing> see point 1.3

Purpose for inter-laboratory test comparisons ¹	No. participating laboratories	Region(s) of participating OIE Member Countries
PrP Immunohistochemistry proficiency	4	<input type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
PrP ELISA proficiency	7	<input type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
PrP Western blot proficiency	1	<input type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
PRNP Genotyping proficiency	3	<input type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East

ToR 12: To place expert consultants at the disposal of the OIE

24. Did your laboratory place expert consultants at the disposal of the OIE?

No

25. Additional comments regarding your report: