OIE Reference Laboratory Reports Activities

Activities in 2020

This report has been submitted : 2021-01-19 22:38:58

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Rabies
Address of laboratory:	3851 Fallowfield Road P.O. Box 11300 Station H Nepean, Ontario K2H 8P9 CANADA
Tel.:	+1-343 212 03 04
Fax:	+1-343 212 02 02
E-mail address:	christine.fehlner-gardiner@canada.ca
Website:	www.inspection.gc.ca
Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Abed Harchaoui, DVM, Executive Director, Ontario Laboratories Network
Name (including Title and Position) of OIE Reference Expert:	Christine Fehlner-Gardiner, PhD, Science Laboratory Expert, Head, Centre of Expertise for Rabies
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	
Indirect diagnostic tests		Nationally	Internationally
none	not appliale	0	0
Direct diagnostic tests		Nationally	Internationally
Fluorescent antibody test	Yes	2670	0
Reverse transcription polymerase chain reaction	Yes	5	0
Variant typing by monoclonal antibody panel	Yes	63	0
			0

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
polyclonal antibodyfluorescein conjugate (concentrate)	Fluorescent antibody test	Produced	7 mL	0	0	☐Africa ☐Americas ☐Asia and Pacific ☐Europe ☐Middle East
Monoclonal antibodies	Research applications	Produced	0	20 mL	1	☐Africa ☒Americas ☐Asia and Pacific ☐Europe ☐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?

No

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
COLOMBIA	Critical review of a training presentation for farmers on the characterization and evolution of wildlife rabies in Colombia	Remote
COLOMBIA	Critical review of a proposal for a project to strengthen rabies surveillance and diagnostic capacity in Colombia, Peru, Ecuador and Bolivia; for submission by the four countries to the Comunidad Andina for possible funding.	Remote

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
Antigenic and molecular characterization of the phosphoprotein of the non-hematophagous isolated rabies virus Eptesicus furinalis	2 years	To evaluate the antigenic and genetic stability of the phosphoprotein of RABV. CFIA provided the monoclonal antibodies for use in the study.	Instituto Pasteur de São Paulo	BRAZIL

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:
Rabies case data for animals in Canada. These data were collected and provided to the OIE, WHO/PAHO, and to official veterinarians for the purpose of preparation of export documentation.

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:
Rabies case data for animals in Canada.

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: 7

Klein A, Fahrion A, Finke S, Eyngor M, Novak S, Yakobson B, Ngoepe E, Phahladira B, Sabeta C, De Benedictis P, Gourlaouen M, Orciari LA, Yager PA, Gigante CM, Knowles MK, Fehlner-Gardiner C, Servat A, Cliquet F, Marston D, McElhinney LM, Johnson T, Fooks AR, Müller T, Freuling CM. Further Evidence of Inadequate Quality in Lateral Flow Devices Commercially Offered for the Diagnosis of Rabies. Trop Med Infect Dis. 2020 Jan 18;5(1). pii: E13. doi: 10.3390/tropicalmed5010013

Calvelage S, Smreczak M, Orłowska A, Freuling CM, Müller T, Fehlner-Gardiner C, Nadin-Davis S, Höper D, Trębas P. Population- and Variant-Based Genome Analyses of Viruses from Vaccine-Derived Rabies Cases Demonstrate Product Specific Clusters and Unique Patterns. Viruses. 2020 Jan 17;12(1). pii: E115. doi: 10.3390/v12010115

Nadin-Davis SA, Nituch L, Buchanan T, Fehlner-Gardiner C. 'A long-distance translocation initiated an outbreak of raccoon rabies in Hamilton, Ontario, Canada'. . PLoS Negl Trop Dis. 2020 Mar 25;14(3):e0008113. doi: 10.1371/journal.pntd.0008

Rabies virus infection in a 21-year-old male presenting with ascending paralysis after a bat scratch. Journal of the Association of Medical Microbiologists and Infectious Disease Canada. Published Online: August 07, 2020. https://doi.org/10.3138/jammi-2020-0007

Wallace RM, Cliquet F, Fehlner-Gardiner C, Fooks AR, Sabeta CT, Setién AA, Tu C, Vuta V, Yakobson B, Yang DK, Brückner G, Freuling CM, Knopf L, Metlin A, Pozzetti P, Suseno PP, Shadomy SV, Torres G, Vigilato MAN, Abela-Ridder B, Müller T. Role of Oral Rabies Vaccines in the Elimination of Dog-Mediated Human Rabies Deaths. Emerg Infect Dis. 2020 Dec;26(12):1-9. doi: 10.3201/eid2612.201266. PMID: 33219786; PMCID: PMC7706920.

Aenishaenslin C, Page D, Gagnier M, Massé A, Fehlner-Gardiner C, Lambert L, Hongoh V, Tinline R. Prioritization of areas for early detection of southward movement of arctic fox rabies based on historical surveillance data in Quebec, Canada. Epidemiol Infect. 2020 Dec 17:1-26. doi: 10.1017/S0950268820003003. Epub ahead of print. PMID: 33327978.

Ma X, Monroe BP, Cleaton JM, Orciari LA, Gigante CM, Kirby JD, Chipman RB, Fehlner-Gardiner C, Gutiérrez Cedillo

V, Petersen BW, Olson V, Wallace RM. Rabies surveillance in the United States during 2018. Journal of the American Veterinary Medical Association 2020 256:2, 195-208

b) International conferences: 1
Fehlner-Gardiner C. The changing landscape of rabies in Canada – 2014-2020. 31st International Conference on Rabies in the Americas. Mexico City (virtual conference), Mexico. October 28-30, 2020.

c) National conferences: 0

d) Other:
(Provide website address or link to appropriate information) 1
https://www.inspection.gc.ca/animal-health/terrestrial-animals/diseases/reportable/rabies/rabies-in-canada/eng/1356156989919/1356157139999

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?

No

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)
ISO17025:2017	Accreditation Certificate.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Fluorescent antibody test	Standards Council of Canada

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?

No

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

No

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?

No

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
Proficiency testing of laboratory staff - panel exchange with CFIA Lethbridge Laboratory (fluorescent antibody test)	2	☐Africa ☒Americas ☐Asia and Pacific ☐Europe ☐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?

Yes

Kind of consultancy	Location	Subject (facultative)
Review of metadata schema	Remote	OIE Virtual Biobank project: electronic consultation for the metadata schema

25. Additional comments regarding your report:

In addition to the other activities described in the report, we, along with all the other OIE Reference Laboratories, contributed to the proposal to establish the formal Rabies Laboratory Network ("RABLAB"), which was approved by the Biological Standards Commission in December.

Explanation for certain activities that were not carried out this year: ToR4 - The laboratory is willing and able to perform diagnostic testing for Member Countries but no requests were received in 2020. Similarly, no requests were received from the OIE to organize scientific meetings or attend meetings on behalf of the OIE (ToR9).