

OIE Reference Laboratory Reports Activities

Activities in 2021

This report has been submitted : 2022-01-19 15:59:54

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):	Kristian Hoel, Head of Section
Name (including Title and Position) of OIE Reference Expert:	Sylvie L. Benestad
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			
PrP ELISA	Yes	23000	42
PrP WB	Yes	250	10
PrP IHC	Yes	200	120
Direct diagnostic tests			

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?

No

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
SWEDEN	May	36	36

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
SWEDEN	IHC analysis	mails

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
CWD strain characterization	Several years	Bioassay in bank voles	ISS	ITALY
CWD strain characterization	Several years	Bioassay in transgenic mice	Colorado University	UNITED STATES OF AMERICA
CWD strain characterization	Several years	Bioassay in transgenic mice	INRAe ENVT Toulouse	FRANCE
CWD strain characterization	Several years	Bioassay in transgenic mice	INIA Madrid	SPAIN
CWD strain characterization	Several years	Bioassay in transgenic mice	CEA Jouy en Josas	FRANCE
CWD strain characterization	Several years	Bioassay in transgenic mice	UCL London	UNITED KINGDOM
CWD strain characterization	Several years	Bioassay in transgenic mice	CWRU Cleveland	UNITED STATES OF AMERICA
CWD strain characterization	Several years	Bioassay in transgenic mice	ANSES Lyon	FRANCE
CWD strain characterization	Several years	Bioassay in mice	Roslin Institute Edinburgh	UNITED KINGDOM
CWD strain characterization	Several years	Bioassay in transgenic mice	Alberta University	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:

The Norwegian Veterinary Institute analyzed 12600 cervids in 2021 through the National surveillance program on CWD.

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:
The samples and results are daily published on the Institute web site http://apps.vetinst.no/skrantesykestatistikk/NO/#omrade

**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: 9

- Tranulis MA, Gavier-Widén D, Våge J, Nöremark M, Korpenfelt SL, Hautaniemi M, Pirisinu L, Nonno R, Benestad SL. Chronic wasting disease in Europe: new strains on the horizon. *Acta Vet Scand.* 2021 Nov 25;63(1):48. doi: 10.1186/s13028-021-00606-x. PMID: 34823556; PMCID: PMC8613970.
- Viljugrein H, Hopp P, Benestad SL, Våge J, Mysterud A. Risk-based surveillance of chronic wasting disease in semi-domestic reindeer. *Prev Vet Med.* 2021 Nov;196:105497. doi: 10.1016/j.prevetmed.2021.105497. Epub 2021 Sep 20. PMID: 34564054.
- Güere ME, Våge J, Tharaldsen H, Kvie KS, Bårdsen BJ, Benestad SL, Vikøren T, Madslie K, Rolandsen CM, Tranulis MA, Røed KH. Chronic wasting disease in Norway-A survey of prion protein gene variation among cervids. *Transbound Emerg Dis.* 2021 Aug 4. doi: 10.1111/tbed.14258. Epub ahead of print. PMID: 34346562.
- Wadsworth JDF, Joiner S, Linehan JM, Jack K, Al-Doujaily H, Costa H, Ingold T, Taema M, Zhang F, Sandberg MK, Brandner S, Tran L, Vikøren T, Våge J, Madslie K, Ytrehus B, Benestad SL, Asante EA, Collinge J. Humanised transgenic mice are resistant to chronic wasting disease prions from Norwegian reindeer and moose. *J Infect Dis.* 2021 Jan 27:jiab033. doi: 10.1093/infdis/jiab033. Epub ahead of print. PMID: 33502474.
- Ågren EO, Sörén K, Gavier-Widén D, Benestad SL, Tran L, Wall K, Averhed G, Doose N, Våge J, Nöremark M. First Detection of Chronic Wasting Disease in Moose (*Alces alces*) in Sweden. *J Wildl Dis.* 2021 Apr 1;57(2):461-463. doi: 10.7589/JWD-D-20-00141. PMID: 33822167.
- Pritzkow S, Gorski D, Ramirez F, Telling GC, Benestad SL, Soto C. North American and Norwegian Chronic Wasting Disease prions exhibit different potential for interspecies transmission and zoonotic risk. *J Infect Dis.* 2021 Jul 24:jiab385. doi: 10.1093/infdis/jiab385. Epub ahead of print. PMID: 34302479.
- Bian J, Kim S, Kane SJ, Crowell J, Sun JL, Christiansen J, Saijo E, Moreno JA, DiLisio J, Burnett E, Pritzkow S, Gorski D, Soto C, Kreeger TJ, Balachandran A, Mitchell G, Miller MW, Nonno R, Vikøren T, Våge J, Madslie K, Tran L, Vuong TT, Benestad SL, Telling GC. Adaptive selection of a prion strain conformer corresponding to established North American CWD during propagation of novel emergent Norwegian strains in mice expressing elk or deer prion protein. *PLoS Pathog.* 2021 Jul 26;17(7):e1009748. doi: 10.1371/journal.ppat.1009748. PMID: 34310663; PMCID: PMC8341702.
- Mysterud A, Viljugrein H, Rolandsen CM, Belsare AV. Harvest strategies for the elimination of low prevalence wildlife diseases. *R Soc Open Sci.* 2021 Mar 10;8(3):210124. doi: 10.1098/rsos.210124. PMID: 33959374; PMCID: PMC8074915.
- Belsare AV, Millspaugh JJ, Mason JR, Sumners J, Viljugrein H, Mysterud A. Getting in Front of Chronic Wasting Disease: Model-Informed Proactive Approach for Managing an Emerging Wildlife Disease. *Front Vet Sci.* 2021 Jan 6;7:608235. doi: 10.3389/fvets.2020.608235. PMID: 33585599; PMCID: PMC7874108.

b) International conferences: 3

- Jørn Våge, Sylvie Benestad, Petter Hopp, Knut Madslie, Torfinn Moldal, Attila Tarpai, Turid Vikøren, Hildegunn Viljugrein, Tram Vuong: An Update on CWD in Norway- Surveillance and management. Webinar at CIDRAP Minnesota University, 12th October 2021 <https://www.youtube.com/watch?v=SrMW7D7Ooic>

-Sylvie Benestad, Linh Tran, Jørn Våge, Petter Hopp, Knut Madslie, Torfinn Moldal, Attila Tarpai, Turid Vikøren, Hildegunn Viljugrein, Tram Vuong: An Update on CWD in Norway - Scandinavian strains. Webinar at CIDRAP Minnesota University, 12th October 2021 <https://www.youtube.com/watch?v=SrMW7D7Ooic>

-Jørn Våge, Sylvie L. Benestad, Petter Hopp, Knut Madslie, Torfinn Moldal, Carlos das Neves, Malin R. Reiten, Attila Tarpai, Turid Vikøren, Hildegunn Viljugrein & Tram T. Vuong: Skrantesjuke, Avmagringssjuke or Chronic Wasting Disease (CWD), Tarandus network 23rd November 2021, Kiruna, Norway

c) National conferences: 1

Jørn Våge, Sylvie L. Benestad, Petter Hopp, Knut Madslie, Torfinn Moldal, Carlos das Neves, Malin R. Reiten, Attila Tarpai, Turid Vikøren, Hildegunn Viljugrein & Tram T. Vuong: Is Chronic Wasting Disease establishing in Europe with profound effects on human cultures? One Health in the 21st Century, 3rd November 2021, Oslo, Norway

d) Other:

(Provide website address or link to appropriate information) 2

Christer M. Rolandsen og Jørn Våge et al. Kartlegging og overvåking av skrantesjuka (Chronic Wasting Disease - CWD) 2020

file:///C:/Users/04benest/Downloads/2021_42_Kartlegging%20og%20overv%C3%A5king%20av%20skrantesjuka_C
hronic%20Wasting%20Disease%20-%20CWD_2020.pdf

Våge, Jørn, Hopp, Petter, Vikøren, Turid, Madslien, Knut, Tarpai, Attila, Moldal, Torfinn, Benestad, Sylvie Lafond. The surveillance programme for Chronic Wasting Disease (CWD) in free ranging and captive cervids in Norway 2020. Surveillance

program report. Veterinærinstituttet 2021. © Norwegian Veterinary Institute,

file:///C:/Users/04benest/Downloads/2021_13_OK%20CWD%20in%20free%20ranging%20and%20captive%20cervi
ds%20in%20Norway%202020.pdf

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)
ISO/IEC 17025:2017	Akkrediteringsdokument 2021.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
PrP TeSeE ELISA (Bio-Rad)	Norwegian accreditation (NA)
PrP HerdChek ELISA (IDEXX)	Norwegian accreditation (NA)
PrP TeSeE Western Blot (Bio-Rad)	Norwegian accreditation (NA)

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?

Yes

Title of the project or contract	Scope	Name(s) of relevant OIE Reference Laboratories
Comparaison between North American and Norwegian CWD isolates	Characterization of CWD strains	Canadian Food Inspection Agency, Ottawa, Canada

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?

No

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

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: