

WOAH Reference Laboratory Reports Activities 2024

This report has been submitted: 31 janvier 2025 12:36

LABORATORY INFORMATION

*Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	Bovine spongiform encephalopathy
*Address of laboratory:	Via Bologna 148
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*E-mail address:	cristina.casalone@izsplt.it
Website:	www.izsplt.it
*Name (including Title) of Head of Laboratory (Responsible Official):	Dr Cristina Casalone
*Name (including Title and Position) of WOAH Reference Expert:	Dr Cristina Casalone
*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	
		Nationally	Internationally
Indirect diagnostic tests			
None	No	0	0
Direct diagnostic tests			
HerdChek BSE/Scrapie Ag, EIA	Yes	6610	4611
Immunohistochemistry for pathological prion protein (IHC)	Yes	5	0

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Histology	Yes	5	0
BSE Confirmatory IB (WBSE)	Yes	4	1

TOR2: REFERENCE MATERIAL

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

No

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

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient WOA?H Member Countries	Country of recipients
Sections on paraffin slide	IHC and histology	provided	0	20 sections	1	LATVIA,
Frozen nervous tissue C-BSE	Rapid Test	provided	0	20 gr	1	POLAND,
Frozen homogenate nervous tissue negative BSE	Rapid Test	produced for italian labs	700ml	0	11	ITALY,

4. Did your laboratory produce vaccines?

Not applicable

5. Did your laboratory supply vaccines to WOA?H Members?

Not applicable

TOR3: NEW PROCEDURES

6. Did your laboratory develop new diagnostic methods for the designated pathogen or disease?

Yes

Name of the new test or diagnostic method developed	Description and References (Publication, website, etc.)
RT-QuIC	Description: Development of standardised protocol for the in vitro amplification of BSE strains. Publications: 1)"Detection and discrimination of classical and atypical L-type bovine spongiform encephalopathy by real-time quaking-induced conversion". Christina D Orrú, Alessandra Favole, Cristiano Corona, Maria Mazza, Matteo Manca, Bradley R Groveman, Andrew G Hughson, Pier Luigi Acutis, Maria Caramelli, Gianluigi Zanusso, Cristina Casalone, Byron Caughey. J Clin Microbiol. 2015 Apr;53(4):1115-20. doi: 10.1128/JCM.02906-14. Epub 2015 Jan 21. 2)"RT-QuIC detection of pathological prion protein in subclinical goats following experimental oral transmission of L-type BSE". Alessandra Favole, Maria Mazza, Antonio D'Angelo, Guerino Lombardi, Claudia Palmitessa, Luana Dell'Atti, Giulia Cagnotti, Elena Berrone, Marina Gallo, Tiziana Avanzato, Erika Messana, Loretta Masoero, Pier Luigi

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Acutis, Daniela Meloni, Franco Cardone, Maria Caramelli, Cristina Casalone, Cristiano Corona. BMC Res Notes. 2021 Dec 7;14(1):442.
doi: 10.1186/s13104-021-05859-3.

7. Did your laboratory validate diagnostic methods according to WOAHP 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 WOAHP Standards for the designated pathogen or disease?

No

TOR4: DIAGNOSTIC TESTING FACILITIES

10. Did your laboratory carry out diagnostic testing for other WOAHP Members?

Yes

Name of WOAHP Member Country seeking assistance	Date	Which diagnostic test used	No. samples received for provision of diagnostic support	No. samples received for provision of confirmatory diagnoses
SLOVENIA	2024-08-11	WBSE	0	1

11. Did your laboratory provide expert advice in technical consultancies on the request of an WOAHP Member?

Yes

Name of the WOAHP Member Country receiving a technical consultancy	Purpose	How the advice was provided
SLOVAKIA	Technical support on the immunohistochemistry diagnosis of BSE	Continuous exchange of technical information via e-mail and sending of new slides
ROMANIA	Technical support on the immunohistochemistry diagnosis of BSE	Continuous exchange of technical information via e-mail and sending of new slides
LATVIA	Technical support on the immunohistochemistry diagnosis of BSE	Continuous exchange of technical information via e-mail and sending of new slides
LITHUANIA	Technical support on the immunohistochemistry diagnosis of BSE	Continuous exchange of technical information via e-mail and sending of new slides
CYPRUS	Technical support on the immunohistochemistry diagnosis of BSE	Continuous exchange of technical information via e-mail and sending of new slides
AUSTRIA	Technical support on the immunohistochemistry diagnosis of BSE	Continuous exchange of technical information via e-mail and sending of new slides
CZECH REPUBLIC	Technical support on the immunohistochemistry diagnosis of BSE	Continuous exchange of technical information via e-mail and sending of new slides

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UNITED KINGDOM	Technical support on the immunohistochemistry diagnosis of BSE	Continuous exchange of technical information via e-mail and sending of new slides
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TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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
Enhancing Research for Africa Network ended in April 2024	36 months	The main task of the ERFAN network aims at enhancing research collaborations and to push forward the activities of veterinary Institutions	2 Italians Institutions :IZSPLV and ISS	ALGERIA BOTSWANA LESOTHO LIBYA MOROCCO MOZAMBIQUE NAMIBIA SENEGAL SOUTH AFRICA SUDAN TANZANIA TUNISIA

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?

Yes

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

Since 2011, no cases of BSE, either classical or atypical, have been detected. Nevertheless, each year we produce a detailed report on the monitoring activities, which include rapid testing data for approximately 50,000 fallen stock annually.

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:

Each year, a national report on BSE surveillance is provided to the Health Ministry. Additionally, annual surveillance data are shared with EFSA. Summary data are accessible through the annual EU Summary Report on TSEs (e.g., the most recent report can be found at <https://www.efsa.europa.eu/en/efsajournal/pub/9097>) and through a freely accessible EFSA dashboard (<https://www.efsa.europa.eu/en/microstrategy/tse>).

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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- Di Muro G, Tessarolo C, Cagnotti G, Favole A, Ferrini S, Ala U, Bellino C, Borriello G, Gallo M, Iamone G, Iulini B, Pezzolato M, Casalone C, Caramelli M, Capucci L, Cavadini P, Corona C, D'Angelo A. Neurofilament light chain (Nf-L) in cerebrospinal fluid and serum as a potential biomarker in the differential diagnosis of neurological diseases in cattle. *Vet Res.* 2025 Jan 10;56(1):6. doi: 10.1186/s13567-024-01441-4. PMID: 39794836; PMCID: PMC11724550.
- Ferrini S, Cagnotti G, Ala U, Avilii E, Bellino C, Biasibetti E, Borriello G, Corona C, Di Muro G, Iamone G, Iulini B, Pezzolato M, Bozzetta E, D'Angelo A. Cerebrospinal fluid L-lactate as a diagnostic marker for infectious-inflammatory disorders in the central nervous system of cattle. *Front Vet Sci.* 2024 Oct 9;11:1466920. doi: 10.3389/fvets.2024.1466920. PMID: 39444739; PMCID: PMC11496040.
- EFSA Panel on Biological Hazards (BIOHAZ); Koutsoumanis K, Allende A, Bolton D, Bover-Cid S, Chemaly M, De Cesare A, Herman L, Hilbert F, Lindqvist R, Nauta M, Nonno R, Peixe L, Ru G, Simmons M, Skandamis P, Suffredini E, Adkin A, Andreoletti O, Griffin J, Lanfranchi B, Ortiz-Pelaez A, Ordonez AA. BSE risk posed by ruminant collagen and gelatine derived from bones. *EFSA J.* 2024 Jul 16;22(7):e8883. doi: 10.2903/j.efsa.2024.8883. PMID: 39015303; PMCID: PMC11249823.
- EFSA Panel on Biological Hazards (BIOHAZ), Koutsoumanis, K., Allende, A., Bolton, D., Bover-Cid, S., Chemaly, M., ... & Ordonez, A. A. (2024). Evaluation of alternative methods of tunnel composting (submitted by the European Composting Network) II. *EFSA Journal*, 22(4), e8745.

b) International conferences:

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- ERFAN meeting – 22-24 april 2024, Namibia
- IX International Conference Emerging Zoonoses 9-12 june 2024, Palermo
- 21st Annual Meeting TSE EURL EURL 13-15 may 2024, Roma
- Prion 2024, 23-27 October 2024, Nanchang, China

c) National conferences:

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- Congress of Istituti Zooprofilattici Sperimentali on animal spongiform encephalopathies ,24-25 november 2024 Rome
- 8th Italian Society for Virology Congress, 7-9 july 2024 Bologna

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

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Book chapter

Casalone C., Iulini B., Vallino E. Revision book chapter "Agenti infettivi non convenzionali: i prioni" Libro Poli new edition 2023-2024

Abstracts for international conferences:

- "Biosecurity in national reference laboratories for transmissible spongiform encephalopathies: a survey highlights room for improvement, 21st Annual Meeting of the European Reference Laboratory and National Reference Laboratories for transmissible spongiform encephalopathies and Joint Workshop of the European Reference Laboratories for Transmissible Spongiform Encephalopathies and Animal Proteins". Roma, Italia, 13-15 may 2024.

Abstracts for national conferences

- Biosafety in European National Reference Laboratories for Spongiform Encephalopathies: a survey shows room for improvement "XLVIII

Congresso dell'Associazione Italiana di Epidemiologia 2024, Riccione, 16-19 april 2024

International teaching

21st Meeting EURL TSE Roma, 13 -15 may 2024

- "Rapid Tests EQA (RB & RS): results of the 2023 round and forthcoming 2024 round"
- "Confirmatory immunoblotting (WB & WS): results of the 2023 round and forthcoming 2024 round"
- "Rapid and confirmatory tests: issues & news"
- "PrP Immunohistochemistry Technical EQA"
- "Histopathology interpretation EQA"
- "Biosafety in prion labs: development of best practices Biosafety"
- "Can the use of Real-Time Quaking-Induced Conversion Assay improve the surveillance of animal TSEs?"
- "EURL TSE Activities"
- "TSE diagnosis: from past challenges to future perspectives"
- "Epidemiological situation EU- worldwide"

Pathological Aspects of Livestock Animals in Slaughterhouse, Torino 16- 18 october 2024 :

- WOAHP Reference Laboratory for BSE and Scrapie
- Practical session: Histo-neuropathology

Training courses and conferences organized by staff

- XXIII Convegno degli Istituti Zooprofilattici Sperimentali sulle Encefalopatie Spongiformi Trasmissibili Roma 25-26 november 2024
- Training Course "Pathological Aspects of Livestock Animals in Slaughterhouse". Torino 16-18 October 2024, in collaboration with Stor-Remesa and addressed to veterinary inspectors and pathologists from the countries of the Remesa area.
- ERFAN: TSE Training and Working Group meeting in Windhoek, Namibia, 22 - 24 April 2024.

Training courses attended by staff

"Transmissible spongiform encephalopathies: Update on regulatory, epidemiological and diagnostic aspects" Matera, 11 june 2024

Research project

The OIE Virtual Biobank: a Web-based catalogue of biological resources

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAHP 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)	Certificato di accreditamento revisionato il

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ISO17025	PDF	23.01.25 -705252.pdf (1).crdownload.pdf
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19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
HERDCHEK BSE/SCRAPIE ANTIGEN KIT TEST EIA IDEXX	ACCREDIA-ILAC MRA
BSE confirmatory immunoblot	ACCREDIA-ILAC MRA
Immunohistochemistry for pathological prion protein	ACCREDIA-ILAC MRA
Histology	ACCREDIA-ILAC MRA

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

Yes

Biosafety guidelines have been produced for personnel working within laboratories that handle prions

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?

Yes

Title of event	Date	location	Role (speaker, presenting poster, short communications)	Title of the work presented
EURL TSE Meeting	2024-05-12	Rome	Speakers	Feedback on the Proficiency Testing EQA round
EURL TSE Meeting	2024-05-13	Rome	Speakers	Feedback on the Proficiency Testing EQA round
TSE Training and Working Group meeting- ERFAN	2024-04-21	Windhoek-Namibia	Speakers	ERFAN Working group on TSE – South Africa "Overview on prion diseases" ; "An overview of TSE surveillance in EU and Risk-based classification of countries: WOA?Hsystem" ; "Diagnosis of animal prion diseases by rapid test and Western Blot confirmatory method" ; "BSE and Scrapie confirmatory tests by Histopathology, Immunohistochemistry, and differential diagnosis"
TSE Training and Working Group meeting- ERFAN	2024-04-22	Windhoek-Namibia	Speaker	ERFAN Working group on TSE – South Africa "Biosafety of prion diseases"; "Animal

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				proteins in feed "
TSE Training and Working Group meeting- ERFAN	2024-04-23	Windhoek- Namibia	Speaker - working group coordinator	TSE Working Group: discussion and planification activities
Pathological Aspects of Livestock Animals in Slaughterhouse	2024-10-15	Turin	Speakers	"WOAH Reference Laboratory for BSE and Scrapie"
Pathological Aspects of Livestock Animals in Slaughterhouse	2024-10-16	Turin	Speakers	"Practical session: Gross Pathology"; "Practical session: Histo-neuropathology"
Pathological Aspects of Livestock Animals in Slaughterhouse	2024-10-17	Turin	Speakers	"Biosafety: from slaughterhouse to the laboratory"

TOR10: NETWORK WITH WOAHA REFERENCE LABORATORIES

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

Yes

24. Do you network (collaborate or share information) with other WOAHA Reference Laboratories designated for the same pathogen?

No

25. Did you organise or participate in inter-laboratory proficiency tests with WOAHA 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 WOAHA Ref. Labs/ organising WOAHA Ref Lab
TSE Histopathology and immunohistochemistry interpretation EQA	Participant	42	NRLs
PrP immunohistochemistry technical EQA	Participant	19	NRLs
BSE Confirmatory Immunoblot	Participant	22	NRLs
BSE screening rapid tes	Participant	28	NRLs

26. Did your laboratory collaborate with other WOAHA Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?

No

TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

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

Yes

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Purpose for inter-laboratory test comparisons ¹	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAH Member Countries
Harmonising existing test methods (IDEXX HerdCheck BSE-scrapie Antigen Kit EIA for Italian network laboratories)	Organizer	11	Rapid test	ITALY,

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

Yes

Our WOAH Centre for BSE collaborates with EURL TSE as part of the same Institution and also all staff, including myself, works for both centres. From 2019 we have been providing diagnostic advice to European Nrls. From some years we have been working closely with countries in North Africa and South Africa.