

# OIE Reference Laboratory Reports Activities

## *Activities in 2021*

**This report has been submitted : 2022-01-19 12:53:53**

<b>Name of disease (or topic) for which you are a designated OIE Reference Laboratory:</b>	Scrapie
<b>Address of laboratory:</b>	Centro de Investigación en Encefalopatías y Enfermedades Transmisibles Emergentes. Universidad de Zaragoza. C/ Miguel Servet, 177 50013 Zaragoza SPAIN
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<b>Name (including Title) of Head of Laboratory (Responsible Official):</b>	Dra. Marta Monzón
<b>Name (including Title and Position) of OIE Reference Expert:</b>	Prof. Juan José Badiola Díez. Catedrático de Sanidad Animal. Director del Centro de Investigación en Encefalopatías y Enfermedades Transmisibles Emergentes
<b>Which of the following defines your laboratory? Check all that apply:</b>	Academic

**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		Nationally	Internationally
BioRad TeSeE ELISA	Sí	587	-
IDEXX herdCheck Scrapie/BSE antigen test kit, EIA/ELISA	Sí	3741	-
Direct diagnostic tests		Nationally	Internationally
Histopatología	Sí	98	-
Inmunohistoquímica	Sí	98	-

**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?

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
CHILE	Confirmación de diagnóstico en casos sospechosos de Scrapie	Ante la solicitud realizada por el país, se mostró la disposición para realizar el diagnóstico de confirmación en los casos sospechosos de Scrapie

**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
Programa operativo de Cooperación Territorial España-Francia-Andorra (POCTEFA) REDPRION	3 años	Red de investigación transfronteriza en enfermedades priónicas humanas y animales.	Universidad de Zaragoza, INRA Toulouse, Universidad de Barcelona y Autónoma de Barcelona, CIC BioGUNE.	SPAIN FRANCE

**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:
Los datos se recogen y envían al Ministerio de Agricultura, Pesca y Alimentación.

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

No

If the answer is no, please provide a brief explanation of the situation:
Los datos recogidos se envían al Ministerio de Agricultura, Pesca y Alimentación para su difusión y divulgación.

**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: 10

1. Otero A, Betancor M, Eraña H, Fernández N, Lucas JJ, Badiola JJ, Castilla J, Bolea R. Prion-associated neurodegeneration causes both endoplasmic reticulum stress and proteasome impairment in a murine model of spontaneous disease. *Int J Mol Sci.* 2021;Jan 5;22(1):465. doi:10.3390/ijms22010465.

2. Guijarro MI, Garcés M, Andrés-Benito P, Marín B, Otero A, Barrio T, Carmona M, Ferrer I, Badiola JJ, Monzón M. Neuroimmune response mediated by cytokines in natural Scrapie after chronic dexamethasone treatment. *Biomolecules* 2021, 11(2), 204 (doi:10.3390/biom11020204).

3. Acín C, Bolea R, Monzón M, Monleón E, Moreno B, Filali H, Marín B, Sola D, Betancor M, Guijarro IM, García M, Vargas A, Badiola JJ. Classical and atypical scrapie in sheep and goats. Review on the etiology, genetic factors, pathogenesis, diagnosis, and control measures of both diseases. *Animals (Basel).* 2021 Mar 4;11(3):691. doi:

10.3390/ani11030691. PMID: 33806658; PMCID: PMC7999988.

4. Nonno R, Marin-Moreno A, Carlos Espinosa J, Fast C, Van Keulen L, Spiropoulos J, Lantier I, Andreatti O, Pirisinu L, Di Bari MA, Aguilar-Calvo P, Sklaviadis T, Papisavva-Stylianou P, Acutis PL, Acin C, Bossers A, Jacobs JG, Vaccari G, D'Agostino C, Chiappini B, Lantier F, Groschup MH, Agrimi U, Maria Torres J, Langeveld JPM. Characterization of goat prions demonstrates geographical variation of scrapie strains in Europe and reveals the composite nature of prion strains. *Sci Rep.* 2020 Jan 8;10(1):19. doi: 10.1038/s41598-019-57005-6. PMID: 31913327; PMCID: PMC6949283.

5. Barrio T, Vidal E, Betancor M, Otero A, Martín-Burriel I, Monzón M, Monleón E, Pumarola M, Badiola JJ, Bolea R. Evidence of p75 neurotrophin receptor involvement in the central nervous system pathogenesis of classical scrapie in sheep and a transgenic mouse model. *Int J Mol Sci.* 2021 Mar 8; 22(5):2714. doi: 10.3390/ijms22052714.

6. García-Mendivil L, Mediano D.R, Hernaiz A, Sanz-Rubio D, Vázquez FJ, Marín B, López-Pérez O, Otero A, Badiola JJ, Zaragoza P, Ordovás L, Bolea R, Martín-Burriel I. Effect of scrapie prion infection in ovine bone marrow-derived mesenchymal stem cells and ovine mesenchymal stem cell-derived neurons. *Animals (Basel)* 2021 Apr 15; 11(4): 1137. doi: 10.3390/ani11041137.

7. Toledano-Díaz A, Álvarez MI, Rodríguez JJ, Badiola JJ, Monzón M, Toledano A. Reflections on cerebellar neuropathology in classical scrapie. *Biomolecules.* 2021 Apr 28;11(5):649. doi: 10.3390/biom11050649.

8. Garcés M, Guijarro IM, Ritchie DL, Badiola JJ, Monzón M. Novel morphological glial alterations in the spectrum of prion disease types: A focus on common findings. *Pathogens.* 2021 May 13;10(5):596. doi: 10.3390/pathogens10050596.

9. López-Pérez Ó, Sanz-Rubio D, Hernaiz A, Betancor M, Otero A, Castilla J, Andreatti O, Badiola JJ, Zaragoza P, Bolea R, Toivonen JM, Martín-Burriel I. Cerebrospinal fluid and plasma small extracellular vesicles and miRNAs as biomarkers for prion diseases. *Int J Mol Sci.* 2021 Jun 25;22(13):6822. doi: 10.3390/ijms22136822.

10. Betancor M, Moreno-Martínez L, López-Pérez Ó, Otero A, Hernaiz A, Barrio T, Badiola JJ, Osta R, Bolea R, Martín-Burriel I. Therapeutic assay with the non-toxic C-Terminal fragment of tetanus toxin (TTC) in transgenic murine models of prion disease. *Mol Neurobiol.* 2021 Oct; 58(10):5312-5326. doi: 10.1007/s12035-021-02489-5. Epub 2021 Jul 20.

#### b) International conferences: 5

1. Nombre del Congreso: XV European Meeting on Glial Cells in Health and Disease, GLIA 2021 (virtual) Marsella. 5 - 9 Julio 2021. Poster: The potential role of the neuroinflammatory response in Purkinje cell damage: a prion disease as natural model of neurodegenerative diseases.

2. Nombre del Congreso: 9th Iberian Congress on Prions. Jaca, 1-2 December 2021. Oral presentation: Study of neurogranin and its association with prion-related histopathological lesions in the central nervous system of pre-clinical and clinical naturally scrapie-affected sheep compared to healthy controls. Betancor M1, Marín B1, García M, Sola D, Hernaiz A, Pérez Lázaro S, Otero A, Martín-Burriel I, Badiola JJ, Bolea R.

3. Nombre del Congreso: 9th Iberian Congress on Prions. Jaca, 1-2 December 2021. Oral presentation. Distinctive Toll-like receptors gene expression and glial response in different brain regions of natural scrapie. García-Martínez M, Otero A, Cortez LM, Betancor M, Serrano-Pérez B, Bolea R, Badiola JJ, Garza MC.

4. Nombre del Congreso: 9th Iberian Congress on Prions. Jaca, 1-2 December 2021. Poster. Proteomic analysis of cerebrospinal fluid in prion diseases. Pérez-Lázaro S, Filali H, Bravo S, Barrio T, Otero A, Llorens F, Requena J, Martín-Burriel I, Badiola JJ, Bolea R.

5. Nombre del Congreso: 9th Iberian Congress on Prions. Jaca, 1-2 December 2021. Poster. PERK and BIP proteins as biomarkers of endoplasmic reticulum stress in prion diseases. Lozada J, Pérez Lázaro S, Betancor M, Sevilla E, Bolea R, Badiola JJ, Otero A.

#### c) National conferences: 3

1. Nombre del congreso: XXXII Reunión de la SEAPV. 1 de octubre 2020-2021

Comunicación oral: Estudio de la expresión de la neurogranina en el sistema nervioso central de ovinos infectados naturalmente con scrapie y análisis de su potencial como biomarcador en enfermedades priónicas. Betancor M, Marín B, García M, Sola D, Hernaiz A, Pérez Lázaro S, Martín-Burriel I, Badiola JJ, Bolea R.

2. Nombre del congreso: XXXII Reunión de la SEAPV. 1 de octubre 2020-2021

Comunicación oral: Estudio de la expresión de las proteínas PERK y BiP como marcadores de estrés del retículo endoplásmico en enfermedades priónicas. Lozada Ortiz J, Pérez Lázaro S, Betancor M, Bolea R, Badiola JJ, Otero A.

3. Nombre del congreso: XXXII Reunión de la SEAPV. 1 de octubre 2020-2021

Comunicación oral: Influencia de la región del sistema nervioso central en la neuroinflamación asociada a las enfermedades priónicas. García, M, Cortez L, Serrano B, Betancor M, Sola D, Bolea R, Monleón E, Badiola JJ, Garza MC.

d) Other:

(Provide website address or link to appropriate information) 2

1. Trabajo de fin de Máster: Métodos de extracción de priones de muestras ambientales. Javier Orcástegui Delso (19/11/2021)

2. También se han impartido otros cursos y conferencias dirigidos a investigadores, veterinarios, ganaderos, asociaciones de consumidores y público en general. También se ha proporcionado información a través de los medios de comunicación (periódicos, revistas, radio y televisión).

**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: 0

b) Seminars: 0

c) Hands-on training courses: 1

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
JUAN	JUAN	JUAN

**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)
UNE-EN ISO/IEC 17025:2017	CERT_1951_LE_1663_rev2.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
ELISA BIORAD	ENAC (ENTIDAD NACIONAL DE ACREDITACIÓN)
ELISA IDEXX	ENAC (ENTIDAD NACIONAL DE ACREDITACIÓN)
HISTOPATOLOGÍA	ENAC (ENTIDAD NACIONAL DE ACREDITACIÓN)
INMUNOHISTOQUÍMICA	ENAC (ENTIDAD NACIONAL DE ACREDITACIÓN)

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?

No

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 <sup>1</sup>	No. participating laboratories	Region(s) of participating OIE Member Countries
Comprobar la capacidad de los laboratorios participantes de diagnosticar correctamente muestras para prurigo lumbar, mediante el empleo de técnicas de diagnóstico rápido autorizadas en la UE.	18	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" 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?

Yes

Kind of consultancy	Location	Subject (facultative)
Colaboración en la revisión final de las modificaciones del OIE Terrestrial Manual Chapter on Scrapie	Correo electrónico	OIE Terrestrial Manual Chapter on Scrapie

25. Additional comments regarding your report:



Se mantiene el contacto con los laboratorios responsables del diagnóstico de Prúrigo lumbar de Perú y Chile, que han solicitado la colaboración para el desarrollo del diagnóstico de confirmación de EEB y Prúrigo lumbar.

Como comentario general debe tenerse en cuenta que, al igual que en el año 2020, la Pandemia Covid-19 ha reducido de forma importante las actividades previstas en varios países de Latinoamérica, así como la anulación de la mayoría de los Congresos previstos sobre enfermedades priónicas lo que ha afectado a la actividad de nuestro laboratorio