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## **Center for Encephalopathies and Transmissible Emerging Diseases, a Reference Laboratory for Transmissible Spongiform Encephalopathies**

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### **Abstract**

The Center for Encephalopathies and Transmissible Emerging Diseases belongs to University of Zaragoza, Spain and is considered an Official Reference Laboratory for Bovine Spongiform Encephalopathy (BSE) and Scrapie by the OIE (World Organization for Animal Health).

Transmissible spongiform encephalopathies (TSEs) or prion diseases, including Creutzfeldt-Jakob disease, BSE and scrapie, are fatal neurodegenerative diseases affecting animals and humans caused by the accumulation of the abnormal form of the cellular prion protein. Scrapie is the prion disease affecting small ruminants and is considered a natural animal model for the study of these pathologies.

Different research lines that aimed to advance in the knowledge of various animal diseases, with special attention to TSEs, have been developed in this Center for several years. In this regard, epidemiological and diagnostic studies performed here have contributed to the development of surveillance, control and eradication programs and the monitoring of these disorders. Diverse studies have been also conducted on the pathogenic and genetic aspects of prion diseases, the zoonotic potential and new biomarkers of TSEs, the study of the transmissibility and infectivity of atypical scrapie, the role of glial cells in human prion diseases, the assessment of the inflammatory response in a scrapie model as a prototype of prion disease and the role of innate immunity in the development of prion diseases (Acín et al., 2004; Bolea et al., 2017; Filali et al., 2014; Hedman et al., 2018).

The recent identification of a new prion disease in dromedary camels, called camel prion disease (CPD), adds one more disease to the group of existing animal prion diseases (Babelhadj B et al., 2018). The emergence of this novel disease requires attention of Reference Laboratories in order to assess the risks of this disease to Animal and Public Health. Thus, further research and surveillance of prion diseases from a One Health perspective is still highly needed.

### **Keywords:**

Epidemiology, Pathogenesis, Prion Diseases, Scrapie, Zoonotic Potential.



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