Commentary on “Identification of H-type BSE in Portugal”

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TO THE EDITOR:

In the paper “Identification of H-type BSE in Portugal” published in Prion, Orge et al. provide a thorough phenotypic and genetic characterization of a BSE case identified in Portugal, in a 13-year-old cow that was born after the implementation of a reinforced feed ban.1 Their data show that the animal was affected by atypical H-type BSE, which is a rare bovine condition in cattle of largely unknown significance. In this study the authors refer to a case report published by our laboratory in 2012 and state: “...most [H-type BSE cases] occur in older animals of the age of 8 y and older although in one instance a weak and incompletely proven H-type case has been reported in Switzerland in a 6.5 y old animal.”2

This statement implies that the analysis of this Swiss animal has not been undertaken properly and that it may have been misclassified with regard to the BSE type.

The standard for the discrimination of atypical and classical BSE is the comparison of the banding pattern and antibody reactivity of the Proteinase K (PK) resistant prion protein, PrP\textsuperscript{res}, in Western immunoblot. For this purpose a 2-blot protocol is laid down in a guideline of the European Union Reference Laboratory for BSE, which is also recognized as the standard by the World Organization for Animal Health.3,4 For H-type BSE these criteria are (i) an increased molecular mass of the unglycosylated PrP\textsuperscript{res} when compared to that in classical BSE and (ii) the...
reactivity of PrPres with N-terminal PrP antibodies such as 12B2 or P4. This protocol was applied to the Swiss BSE case in our laboratory under ISO 17025 accreditation and the results confirm that this animal was affected by H-type BSE. Additional criteria have been put forward, in particular the presence of a C-terminal, truncated PrPres fragment of ~12 kDa in molecular mass in H-type BSE, which is absent in classical BSE, and the sensitivity of PrPres to proteolysis by PK.5 However, these criteria are formally not required for H-type and classical BSE discrimination and, they have been applied to neither the Swiss nor the Portuguese case.

The OIE sets standards for the recognition of an official BSE risk status of countries, which builds the basis for safe international trade of cattle and their products.6 Since 2015, for the purpose of official BSE risk status recognition, “atypical BSE” (including H-type BSE) is excluded, because it is believed to occur spontaneously in all cattle populations at a very low rate. Thus, misclassified BSE cases may have direct consequences on the BSE risk status and the economy of a country. In this regard, we consider it necessary to clarify that the Swiss case undoubtedly is classified as H-type BSE according to the established criteria.

**DISCLOSURE OF POTENTIAL CONFLICTS OF INTEREST**

No potential conflicts of interest were disclosed.

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