

ADOPTED: 9 July 2015

PUBLISHED: 5 August 2015

doi:10.2903/j.efsa.2015.4197

Scientific Opinion on a request for a review of a scientific publication concerning the zoonotic potential of ovine scrapie prions

EFSA Panel on Biological Hazards (BIOHAZ Panel)

Abstract

The factors that modulate the transmissibility of Transmissible Spongiform Encephalopathies (TSE) and the approaches for the study of their zoonotic potential are reviewed. The paper '*Evidence for zoonotic potential of ovine scrapie prions*' by Cassard et al. (2014) is scientifically appraised, focussing on the experimental design, the results and the conclusions. The paper provides evidence in a laboratory experiment that some Classical scrapie isolates can propagate in humanised transgenic mice and produce prions that on second passage are similar to those causing one form of sporadic Creutzfeldt-Jakob disease (sCJD). It is concluded that the results from the study raise the possibility that scrapie prions have the potential to be zoonotic, but do not provide evidence that transmission can or does take place under field conditions. The conclusions of the 2011 ECDC-EFSA '*Joint Scientific Opinion on any possible epidemiological or molecular association between TSEs in animals and humans*' are reviewed in the light of the new scientific evidence available since its publication. This supports and strengthens the conclusions of that opinion with regard to the potential for some animal TSE to be zoonotic, but does not provide evidence of a causal link between Classical or Atypical scrapie and human TSE. Current evidence does not establish this link, and no consistent risk factors have been identified for sCJD. The possibility of scrapie-related public health risks from the consumption of ovine products cannot be assessed. Recommendations are formulated on further studies and data that are needed to investigate the zoonotic potential of animal TSE and to estimate the amount of infectivity from TSE-infected products sourced from small ruminants and entering the food chain in the European Union.

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Keywords: Atypical scrapie, Classical scrapie, Creutzfeldt-Jakob disease, transmissible spongiform encephalopathy, zoonosis

Requestor: European Commission

Question number: EFSA-Q-2015-00048

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