



Prion - soil interaction and direct detection of soil-bound prions

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Prions, are proteinaceous particles recognized as the agents of a class of neurodegenerative disorders, called transmissible spongiform encephalopathies (TSE), or prion diseases.

Scrapie and chronic wasting disease affects sheep and cervids, respectively. Studies have indicated that horizontal transmission is important in sustaining these epidemics, and that environmental contamination plays an important role in this.

A notable feature of scrapie and CWD is horizontal transmission between grazing animals, implying that contaminated soil may serve to propagate the disease.

In this respect, it has been reported that grazing animals can develop scrapie or CWD after grazing pasture that previously housed infected animals. In the perspective of detecting prions in soil samples by more direct methods than animal-based bioassays, we have developed a novel immuno-based approach that visualises *in situ* the major component (PrP^{Sc}) of prions sorbed onto soil. Our data provide further support to the notion that prion-exposed soils retain infectivity, as recently determined in Syrian hamsters intracerebrally or orally challenged with contaminated soils. The newly cell

approach is faster and cheaper than classical animal-based bioassays.