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A HISTOPATHOLOGICAL AND IMMUNOHISTOCHEMICAL STUDY OF ARCHIVED OVINE NATURAL SCRAPIE CASES

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Introduction

Lesion profiling and patterns of disease-specific prion protein (PrPd) accumulation were evaluated in ovine natural scrapie cases diagnosed in Castilla y León (Spain).

Materials and methods

Tissue sections of medulla oblongata (obex area) from 198 archived ovine scrapie cases were examined histologically and immunohistochemically (IHC), the latter using P4 monoclonal antibody (mAb) against PrPd. Single and double IHC, using Ab against bovine glial fibrillary acidic protein, synaptophysin, human neurofilament and CD68 were performed to investigate the distribution of PrPd in astrocytes, neuronal synapses or processes, and microglial cells, respectively.

Results

In 192 of the 198 cases, intense intraneuronal and intraglial PrPd immunolabelling was detected. Intraneuronal PrPd was most intense in the olivary nuclei. Intraglial and neuropil PrPd deposits were marked in the nucleus of the spinal tract of the trigeminal nerve. The pattern of PrPd deposition was similar in 66 cases from the same herd with different genotypes.

Conclusion

PrPd double labelling is useful for identification of PrPd-positive cells in brain tissue. The profile of PrPd deposition in the brain may help in the characterization of scrapie strains in sheep.