Preclinical diagnosis of prion disease

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Title of project or programme

Preclinical diagnosis of prion disease

Principal Investigators of project/programme grant

Title	Forname	Surname	Institution	Country
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Address of institution of lead PI

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Source of funding information

The Research Council of Norway

Total sum awarded (Euro)

880000

Start date of award

01-01-2007

Total duration of award in months

60

The project/programme is most relevant to

- Prion disease
- Neurodegenerative disease in general

Keywords

TSE, prion disorders, neurodegenerative disorders, biomarker, preclinical diagnose

Research abstract in English

Transmissible spongiform encephalopathies (TSEs) are a threat to food safety and to human and animal health. Diagnosis of these diseases and early detection of the infective agent is vital for future

spread and prevention of disease. The identification of candidate molecules as biomarkers of preclinical disease is a major objective in this project. The molecular mechanisms responsible for these prion diseases share similarities with a wider group of neurodegenerative disorders including Alzheimers and Parkinsons diseases, and the central pathological event is a disturbance of protein folding of a normal cellular protein that is eventually accompanied by neuronal cell death and the death of the host. The quest for a pre-clinical blood screening test for TSE and similar diseases is a hot topic (Brown 2006). In this project, we will use blood (serum and white blood cells, WBC) and cerebrospinal fluid (CSF) from sheep experimentally infected with scrapie and killed at various stages of infection, to explore t he possibilities of diagnosing the prion disease at an early preclinical stage. We will be using modern technology (proteomics, multivariat analyses, immonoPCR, WB, other) in cooperation with national and foreign partners. Pilot experiments already performed are promising.

Lay summary