

Prion protein extraction in animal tissues

Precellys®24

LYSIS & HOMOGENIZATION AUTOMATED EQUIPMENT

UR1282 – Animal Infectiology and Public Health
National Institute of Agronomic Research of Nouzilly



Context

In TSE, the preparation of animal tissues is an important step for the detection of the pathological prion protein.

Brain and spinal cord tissues, lymphoid tissues (tonsils, lymph nodes, spleen,...) are frozen at -80°C. The samples are suspended in a buffer, and protein extraction is followed by ELISA assay and Western blot analysis.

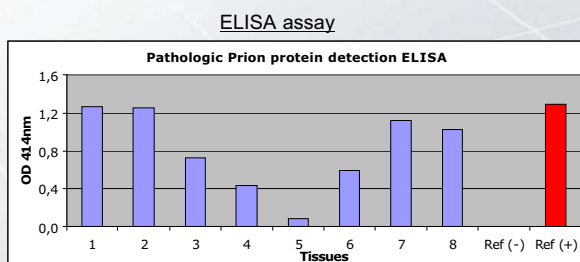
Material

- Precellys®24
- Precellys® kit CK14 (small ceramic beads)
- Sample: 50 - 150 mg of brain and lymphoid tissues
- Buffer: Glucose 5% (500 – 1500 µl) (added after grinding)

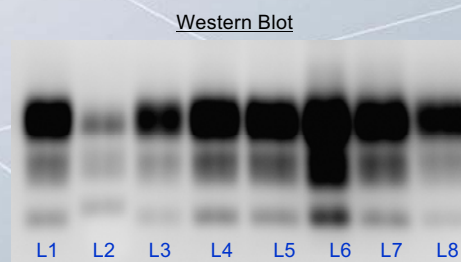
Protocol / Parameters

1. Precellys®24 parameters:
 - Brain tissues: 6500 rpm - 2 x 30 sec (Break 15 sec)
 - Lymphoid tissues: 6500 rpm - 3 x 30 sec (Break 20 sec)
2. Prion protein extraction
3. ELISA assay and Western Blot

Results



The Optical density is proportional with the prion protein concentration.
Samples 1 to 4: brain tissues
Samples 5 to 8: lymphoid tissues



Lanes 4-6: two positive references
Lanes 1-2-3: BSE or Scrapie infected brain tissues
Lanes 5-7-8: BSE infected lymphoid tissues

After prion protein extraction, the pathologic protein is detected and quantified by using specific antibodies through an ELISA test, and the pattern of the glycozylated protein is analyzed by Western Blot.

Conclusion

The Precellys®24 and kit CK14 allow the homogenization of a large range of animal tissues. The preparation optimized the extraction for quantification of the prion protein.

For more details to adapt your own protocol, please contact us at precellys@bertin.fr or visit www.precellys.com