



# Super Fast, Super Cheap, Find your Super Sheep

TeSeE™ PrP<sub>171</sub> Screen Test

- Low-cost Method
- Fast Results
- Easy to Use
- Automated Assay Protocol



TeSeE™ Product Line: One Step Ahead

**BIO-RAD**

# TeSeE™ PrP<sub>171</sub> Screen Test

## Genetics of Scrapie

In sheep, susceptibility to scrapie is genetically determined by codons 136, 154 and 171 of the gene coding for the prion protein. The information carried by codon 171 predominates over that of codon 136 and codon 154. Codon 171 can carry one of 3 amino acids: arginine (R), glutamine (Q) or histidine (H).

High resistance

High susceptibility



## A New Approach to Sheep Selection

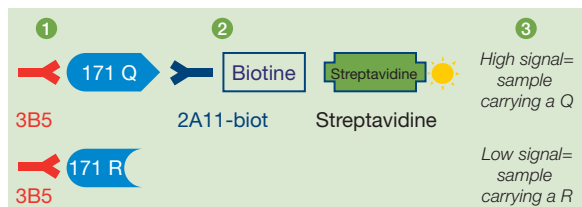
Bio-Rad has developed <sup>(1)</sup> a new ELISA immunoassay for determining PrP polymorphism at position 171. This method ensures rapid selection of the most prion-resistant animals in a flock of sheep. It is fully adapted to large-scale testing conditions and thus can be used as a complementary test to the existing methods (PCR, sequencing) which generally target limited populations (rams) within sheep genotyping programs.

(1) In collaboration with the INIA (Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria, Madrid, Spain) and the CEA (Commissariat à l'Énergie Atomique, Saclay, France)

Low-cost method	Fast results	Easy to use	Automated assay protocol
<ul style="list-style-type: none"> <li>No specific laboratory room required</li> <li>Minimum level of equipment needed</li> <li>Very limited technician hands-on work</li> </ul>	<ul style="list-style-type: none"> <li>Less than 4 hours</li> <li>96-wells microplate assay format</li> <li>Up to 400-500 samples a day can be run manually by a single technician</li> </ul>	<ul style="list-style-type: none"> <li>Test performed on serum</li> <li>No DNA extraction needed</li> </ul>	<ul style="list-style-type: none"> <li>Possible automation with the EVOLIS™ 5°C microplate system for larger test routines</li> <li>Results are automatically printed or exported to the Laboratory Information Management Software (LIMS)</li> </ul>

## Assay Principle

Two-steps ELISA sandwich immunoassay format:



- Denatured PrP protein is captured with a monoclonal Ab (3B5) coated on the surface of the well
- The secondary monoclonal Ab (2A11) is directed against position 171 of the PrP protein. It detects a "Q" (glutamine) or an "H" (histidine) amino acid at this position but does not detect the "R" (arginine) amino acid

Samples with a "Q" amino acid at position 171 provide a high signal while samples with an "R" provide a very low background signal. The test provides increased signals for all the allele combinations. Sheep most resistant to prions are thus easily distinguished from susceptible sheep.

## Assay Performances

The performances of the TeSeE PrP<sub>171</sub> Screen Test have been assessed at various laboratories involved in sheep genotyping, in comparison to the animal's "true genotype" determined by the method currently in use in the laboratory. The test demonstrated very good correlation with PCR methods. Data modeling have clearly shown that, when associated with a strict breeding strategy (e.g. use of a resistant ram, selection of the lamb with the highest resistance probability, etc) the TeSeE PrP<sub>171</sub> Screen Test enables breeders to progressively increase the proportion of the most resistant animals and thus to protect their flocks from all forms of prion-associated diseases (BSE, scrapie, etc).

## Ordering information

Catalog #	Description
355-1185	TeSeE™ PrP <sub>171</sub> Screen Test - 192 tests



Bio-Rad  
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Group

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