

# 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



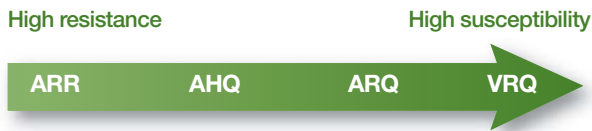
TeSeE™ Product Line: One Step Ahead

**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).



## A New Approach to Sheep Selection

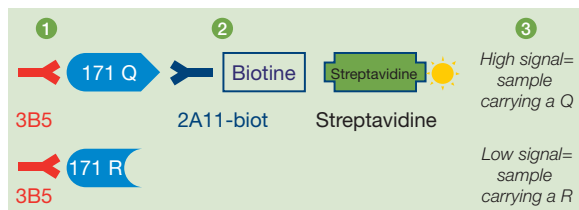
Bio-Rad has developed <sup>(1)</sup> a new ELISA immunoassay for determining PrP polymorphism at position 171. This method ensures rapid selection of the most prion-resistant animals in a flock of sheep. It is fully adapted to large-scale testing conditions and thus can be used as a complementary test 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  
Laboratories, Inc.

Life Science  
Group

Web site [www.bio-rad.com](http://www.bio-rad.com) USA 800 4BIORAD Australia 61 02 9914 2800 Austria 43 (0) 1 877 89 01 Belgium 09 385 55 11 Brazil 55 21 3237 9400 Canada 905 712 2771 China 86 21 6305 2255 Czech Republic 420 241 430 532 Denmark 44 52 10 00 Finland 09 804 22 00 France 33 1 47 95 62 59 Germany 49 (0) 89 318 84 0 Greece 30 210 777 4396 Hong Kong 852 2789 3300 Hungary 36 1 455 8800 India 91 124 2398 112/113/114 Israel 03 951 4127 Italy 39 02 216 091 Japan 03 5811 6270 Korea 82 2 3473 4460 Latin America 305 894 5960 Mexico 52 555 200 0520 The Netherlands 31 318 540 666 New Zealand 64 9 415 2280 Norway 23 38 41 30 Poland 48 22 331 99 99 Portugal 351 21 472 7700 Romania 4021 210 1703 Russia 7 095 721 1404 Singapore 65 6415 3188 South Africa 27 11 442 8508 Spain 34 91 590 5200 Sweden 46 8 555 12700 Switzerland 41 (0) 61 717 95 55 Taiwan 886 2 2578 7189 Thailand 662 651 8311 United Kingdom 44 20 8328 2000 Vietnam 848 823 6757