Scrapie Genotyping

Medigenomix is one of the most experienced and acknowledged laboratories for Scrapie genotyping in Europe. We are **certified according to ISO EN 9001: 2000** and we successfully took part in the inter laboratory tests carried out by the German Federal Ministry of Consumer Protection, Feeding, and Agriculture (BMVEL) and the Federal Research Institution (FAL). Several domestic and foreign breeder associations are our contract partners. Our laboratory capacity is **up to 5000 sheep a week**. We use **direct DNA sequencing** as the most reliable method as evaluated in our test series. As an additional benefit it allows detecting also rare alleles, e.g. **Codon 171 Lys., and even new variants.** ***Rare and new mutations are not extra charged!***

Based on our experience as a contract lab of German police authorities for the production of DNA profiles for the German Forensic DNA Database, we have established an effective quality control system and logistics to avoid errors and mismatch of samples in **high throughput genotyping**.

Background:
Scrapie genotyping is a genetic test on sheep in order to classify them for their risk becoming ill after contact with the pathogen. After the test animals are classified in different genotype classes (e.g. in Germany: G1-G5) and can be selected for breeding to increase TSE resistance in the population. According to the EU-Directive 2003/100/EC every member state has to establish a breeding programme on Scrapie resistance.

Scrapie genotyping is also important for checking healthy animals after having contact with infected sheep to avoid culling of the resistant genotypes.

Analysis:
Decisive for the risk classification are the amino acids at positions 136,154 and 171 of the prion protein, which can be:

Alanine (A) Histidine (H) Glutamine (Q) Arginine (R) Valine (V)

By Scrapie Genotyping the codons for these amino acids are determined and the genotypes are classified, e.g. according to the recommendation of the German project group:

Genotype class	Genotype
G1	ARR/ARR
G2	ARR/AHQ, ARR/ARH, ARR/ARQ
G3	AHQ/AHQ, AHQ/ARH, AHQ/ARQ, ARH/ARH, ARH/ARQ, ARQ/ARQ
G4	ARR/VRQ
G5	AHQ/VRQ, ARH/VRQ, ARQ/VRQ, VRQ/VRQ

Which types of samples are needed?

We accept EDTA blood (1 - 2 ml), blood spots on special filter paper (FTA) or tissue samples from punched ear cartilage. The results are available within 1-2 weeks.

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Order sheet for Scrapie Genotyping

Owner / Client:	**Veterinary /Sample Supplier**
Name:	
Breeder Org.	
Street:	
Place:	
Phone:	
Fax:	

I hereby confirm, that the shipped samples come from the listed animals and are signed correctly.

Date, Place, Signature

Sheep's Data (1 to 2 ml EDTA blood, blood spots on filter paper or tissue samples from ear cartilage)

Testtube No.	♂	♀	Breed	Breed-No./ear cartilage	Date of birth	Bar-Code