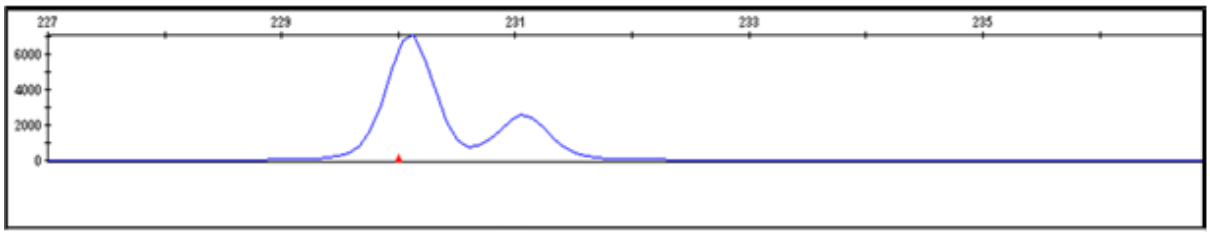
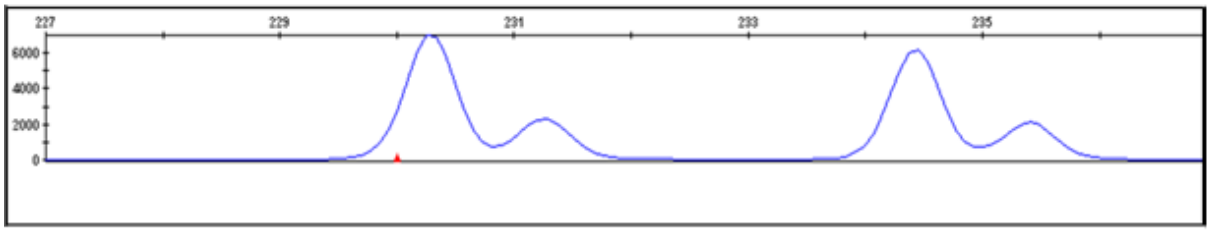
File S2. Examples of rapid genotyping methods for the detection of JEB-carriers.

1.- **Fluorescent fragment length analysis**. A 243 bp PCR fragment including the regions carrying the mutation was amplified. Wild-type animals shows a 243 bp fragment (+/+), JEB-affected animals (EB/EB) display a unique 239 bp fragment (EB/EB) and both fragments could be identified in carriers (+/EB).

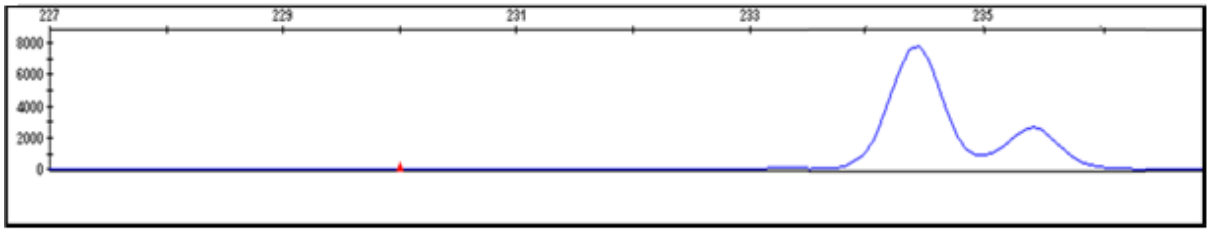
EB/EB



EB/+



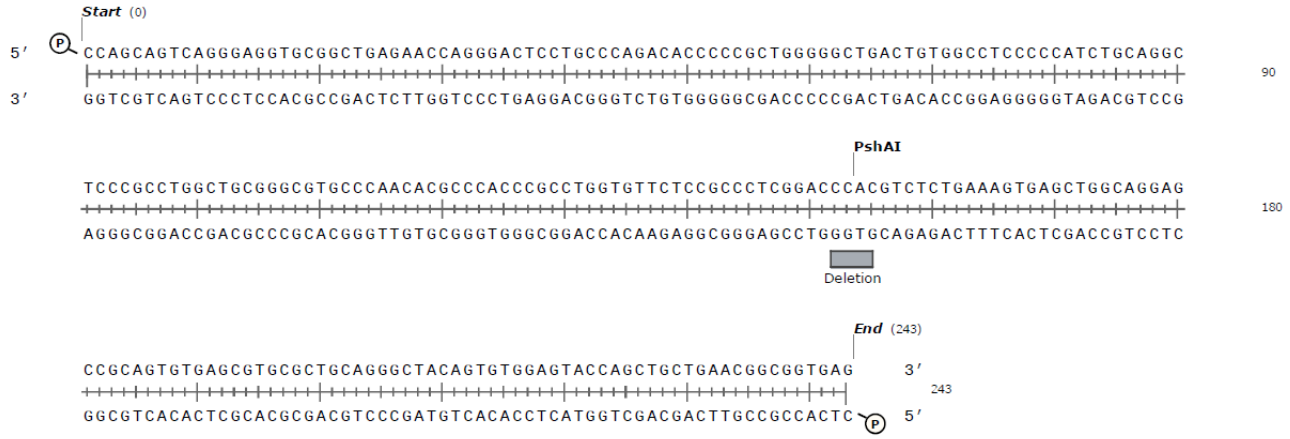
+/+



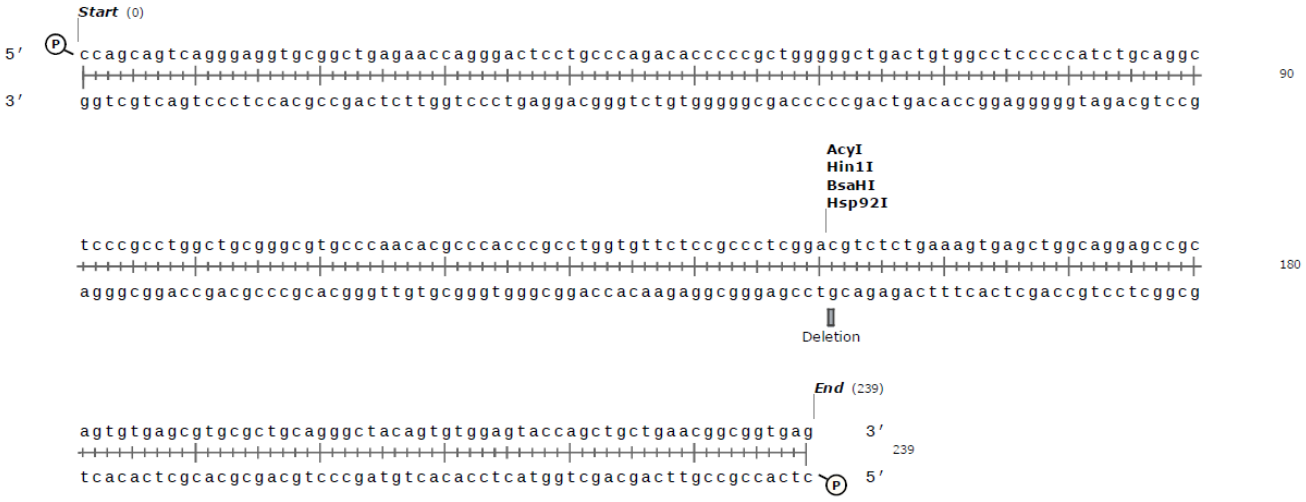
2.- Restriction fragment length polymorphism analysis.

Proposed endonucleases for the analysis in wild-type and mutated sequences.

A.) Restriction map analysis of wild-type sequence (*PshAI*)



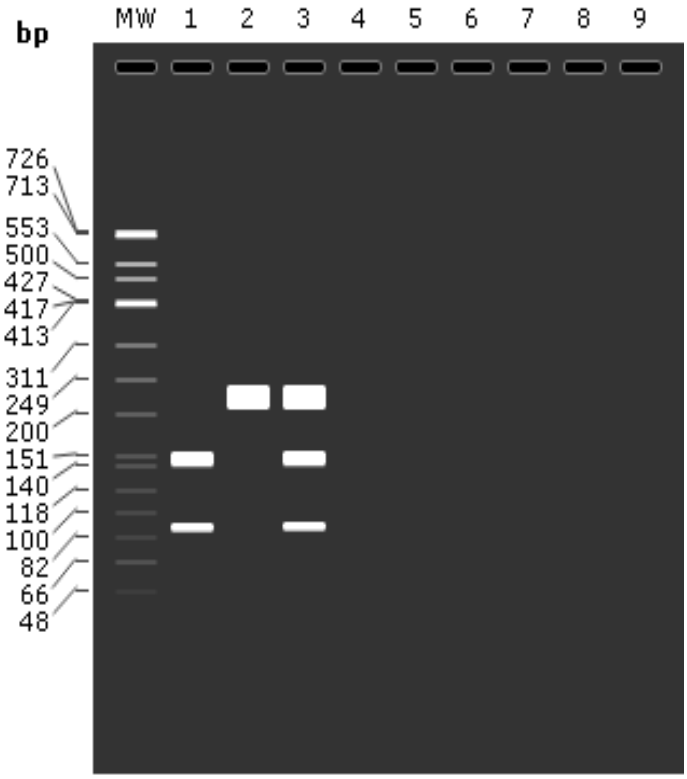
B.) Restriction map analysis of mutated sequence (*AcyI*, *Hin1I*, *Hsp92I and BsaHI*)



C). Agarose gel showing the RFLP produced with *PshAI* (cut wild-type sequence) and *AcyI* (cut mutated sequence)

PshAI digestion

MW: ϕX174DNA – *HinfI* Digest
Lane 1: Wild –type (+/+)
Lane 2: Affected (EB/EB)
Lane 3: Carrier (EB/+)

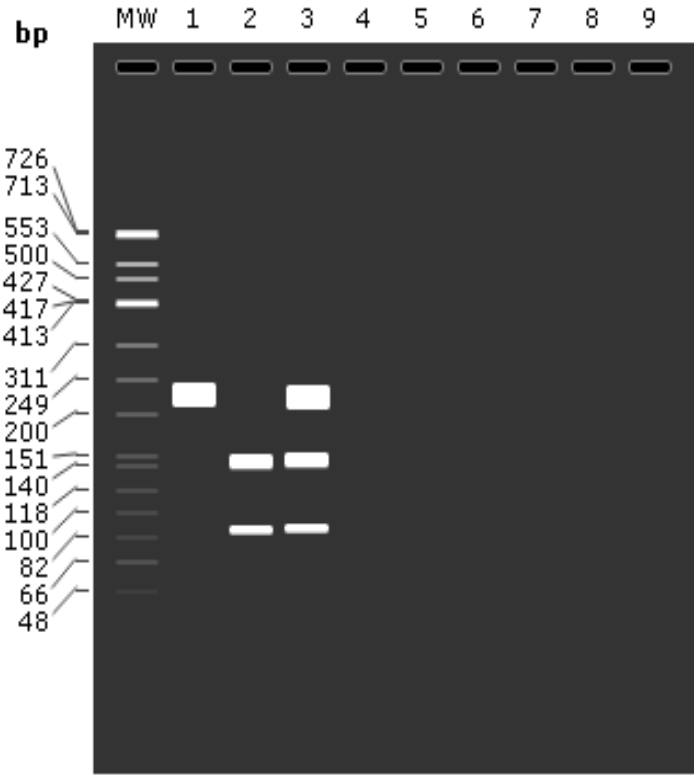


2.5 % agarose

Fragment size:
239 bp: undigested
153 bp + 90 bp (restriction fragments)

AcyI digestion

MW: ϕX174DNA – *HinfI* Digest
Lane 1: Wild –type (+/+)
Lane 2: Affected (EB/EB)
Lane 3: Carrier (EB/+)



2.5 % agarose

Fragment size:
243 bp: undigested
89 bp + 150 bp (restriction fragments)