

## **A particular myosin heavy chain isoform variable between beef breeds**

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The myosin heavy chain (MyHC) isoform IIb, considered as not expressed in bovine muscle, has been revealed by electrophoresis in muscles of some Blonde d'Aquitaine young bulls descendant of the same sire called "Hiver". Interestingly, the animals with this isoform had a higher tenderness (estimated by sensory analysis) and juiciness of their meat.

The objective of this study was to search for the presence of this isoform in large samples of animals of the three French beef breeds: Blonde d'Aquitaine (BA), Charolaise (Ch) and Limousine (Li) and to validate its relation with beef sensorial qualities.

MyHC isoforms of the *Longissimus Thoracis* muscle were separated by electrophoresis and their proportions were evaluated by densitometry on 958 young bulls (roughly 1/3 of each breed). The chromosome 19, where is localised the gene synthesizing MyHC isoform (MYH4), was screened for a QTL associated with the presence/absence of MyHC IIb in the "Hiver" sire family. The co-segregation of 4 micro-satellites and MyHC IIb phenotypes was analysed using the QTLMAP software.

The MyHC IIb isoform was observed with very different frequencies according to the breed: 25% in BA, 6% in Ch, 41% in Li. It is the first time that we observed such differences between breeds for a muscle characteristic. The relation between this isoform and tenderness and juiciness was confirmed only in the BA breed and more particularly in the lineage of the bull "Hiver". A highly significant QTL for this isoform was detected, but no QTL of tenderness could be detected on this chromosome 19.

Further analyses are in progress to study thoroughly the role of this isoform in beef tenderness.