

Polymorphisms in the IGF1 gene and their effect on growth traits in Mexican beef cattle

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ABSTRACT. The IGF1 gene (insulin-like growth factor 1) is a candidate gene for marker-assisted selection strategies. A single nucleotide polymorphism in the promoter region (IGF1/*Sna*BI) has been reported to be associated with production traits in several cattle breeds. Here, we report its allelic frequencies in Charolais and Beefmaster breeds; we confirm its association with three growth traits: weaning weight, weaning weight adjusted to 210 days and preweaning weight gain in the Charolais breed. In addition, we designed a strategy to search these breeds for new polymorphisms in four coding regions of the gene. A C/A transversion was detected in intron 4, but it was not associated with the growth traits. A single nucleotide polymorphism (IGF1/*Sna*BI) is proposed as a selection marker for Mexican Charolais cattle; validation of its association with weaning weight, weaning weight adjusted to 210 days and preweaning weight gain, could complement the genetic evaluations of this breed through marker-assisted management strategies.

Key words: IGF1; SNP IGF1/*Sna*BI; Polymorphism;
Charolais; Beefmaster