



## Prospecting candidate SNPs for backfat in Canchim beef cattle

G.B. Veneroni<sup>1</sup>, S.L. Meirelles<sup>1</sup>, D.A. Grossi<sup>2</sup>, G. Gasparin<sup>1</sup>, A.M.G. Ibelli<sup>1</sup>, P.C. Tizioto<sup>1</sup>, H.N. Oliveira<sup>3</sup>, M.M. Alencar<sup>4</sup> and L.C.A. Regitano<sup>4</sup>

<sup>1</sup>Departamento de Genética e Evolução, Universidade Federal de São Carlos, São Carlos, SP, Brasil

<sup>2</sup>Departamento de Ciências Exatas, Universidade Estadual Paulista Júlio de Mesquita Filho, Jaboticabal, SP, Brasil

<sup>3</sup>Departamento de Zootecnia,

Universidade Estadual Paulista Júlio de Mesquita Filho, Jaboticabal, SP, Brasil

<sup>4</sup>Embrapa Pecuária Sudeste, São Carlos, SP, Brasil

Corresponding author: L.C.A. Regitano

E-mail: luciana@cnpse.embrapa.br

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**ABSTRACT.** Canchim is a composite cattle breed developed in Brazil for beef production. One of the breeding objectives is to increase fat deposition. QTLs for fat thickness and/or marbling have been reported on BTA4 and BTA14. The IGFBP3 and DDEF1 genes, mapped to BTA4 and BTA14, respectively, affect adipogenesis. We looked for SNPs in the IGFBP3 and DDEF1 genes that could be associated with backfat thickness in Canchim beef cattle. For SNP identification, sires with the highest accuracy were ranked according to expected breeding value for fat thickness; the 12 extremes (six sires with the highest and six with the lowest expected breeding value for the trait) were chosen. Six regions of the IGFBP3 and 14 regions of the DDEF1 were sequenced using the Sanger method. Nine SNPs were identified in IGFBP3 and 76 in the DDEF1. After an initial analysis, two SNPs were selected to be genotyped for the whole population;

these were DDEF1g.279401A>G and IGFBP3c.4394T>C(Trp>Arg). We found a significant effect ( $P \leq 0.05$ ) of allele substitution on backfat thickness; however, the IGFBP3 SNP did not significantly affect this trait.

**Key words:** Fat deposition; Candidate genes; SNP identification; Bovine