



Association of single nucleotide polymorphisms in the bovine leptin and leptin receptor genes with growth and ultrasound carcass traits in Nellore cattle

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ABSTRACT. Given the important role of leptin in metabolism, we looked for a possible association of leptin and leptin receptor polymorphisms with carcass and growth traits in Nellore cattle. We examined associations of leptin and leptin receptor SNPs with ultrasound carcass (longissimus dorsi muscle area (ribeye area), backfat thickness and rump fat thickness and growth traits (weaning weight adjusted to 210 days of age, yearling weight adjusted to 550 days of age, weight gain of weaning to yearling and scrotal circumference adjusted to 550 days of age) of 2162 *Bos primigenius indicus* (Nellore) animals. Allele and genotypic frequencies were calculated for each marker. Allele substitution, additive and dominance effects of the

polymorphisms were also evaluated. Some alleles of the molecular markers had low frequencies, lower than 1%, in the sample analyzed, although the same polymorphisms described for *B. p. taurus* cattle were found. Due to very low allelic frequencies, the E2JW, A59V and UASMS2 markers were not included in the analysis, because they were almost fixed. E2FB was found to be significantly associated with weight gain, ribeye area and backfat thickness. The promoter region markers, C963T and UASMS1, were also found to be significantly associated with ribeye area. T945M was significantly associated with weight gain. We conclude that the leptin and receptor gene markers would be useful for marker-assisted selection.

Key words: Beef cattle; *Bos indicus*; Leptin; Molecular markers; Ultrasound traits