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SNPs at 3'-UTR of the bovine *CDIPT* gene associated with Qinchuan cattle meat quality traits

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ABSTRACT. The CDIPT is crucial to the fatty acid metabolic pathway, intracellular signal transduction and energy metabolism in eukaryotic cells. We detected three SNPs at 3'-untranslated regions (UTR), named 3'-UTR_108 A > G, 3'-UTR_448 G > A and 3'-UTR_477 C > G, of the *CDIPT* gene in 618 Qinchuan cattle using PCR-RFLP and DNA sequencing methods. At each of the three SNPs, we found three genotypes named as follows: AA, AB, BB (3'-UTR_108 A > G), CC, CD, DD (3'-UTR_448 G > A) and EE, EF, FF (3'-UTR_477 C > G.). Based on association analysis of these SNPs with ultrasound measurement traits, individuals of genotype BB had a significantly larger loin muscle area than genotype AA. Individuals of genotype CC had significantly thicker back fat than individuals of genotype DD. Individuals of genotype EE also had significantly thicker back fat than did individuals of genotype FF. We conclude that these SNPs of the *CDIPT* gene could be used as molecular markers for selecting and breeding beef cattle with superior body traits, depending on breeding goals.

Key words: Cattle; *CDIPT* gene; Ultrasound measurement traits; SNP; PCR-RFLP

