



A novel splice variant of the bovine *GALNTL5* gene identified in Chinese Holstein bull testis tissue and its mRNA expression

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ABSTRACT. The polypeptide N-acetylgalactosaminyltransferase-like protein 5 (*GALNTL5*) is a newly identified protein that is specifically expressed in testis tissue and participates in spermatogenesis. In this study, we characterized a novel bovine *GALNTL5* splice variant, designated as *GALNTL5-AS*, by using real-time polymerase chain reaction (RT-PCR) and clone sequencing methods. The novel *GALNTL5* isoform was derived from the complete transcript, *GALNTL5*-complete, via alternative splicing (AS). The pattern of the splice variant was exon skipping. Bovine *GALNTL5* transcripts were expressed in the testis, as demonstrated by RT-PCR. The expression levels of both transcripts were higher in adult testes than in calf testes ($P < 0.05$). In addition, prediction analysis showed that the *GALNTL5-AS* transcript only encoded 122 amino acids and lost its glycosyltransferase 1 and Gal/GalNAc-T motifs, which may result in a dysfunctional protein compared with the predominant transcript *GALNTL5*-complete.

This study improves our understanding of the bovine *GALNTL5* gene function during bull sperm formation.

Key words: Alternative splicing; Chinese Holstein bull; Testis; *GALNTL5* gene; Quantitative real-time polymerase chain reaction