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Molecular characterization, chromosome mapping, and expression profile of porcine *CDC16*

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ABSTRACT. Cell division cycle16 (CDC16) is a core component among the eight protein subunits of the anaphase-promoting complex (APC). APC is a cyclin degradation system that governs the exit of cells from mitosis. Not much information is available for *CDC16* in pig. In this study, a 2284-bp cDNA of porcine *CDC16* was obtained by rapid amplification of cDNA ends (RACE). Porcine *CDC16* was assigned to SSC11 q11-17, and was determined to be significantly linked with SW1452 by using somatic cell hybrid panel and radiation hybrid panel. One novel *A*/*G* SNP anchored in intron 7 of the gene was genotyped by restriction enzyme polymerase chain reaction (PCR)-restriction fragment length polymorphism-*Csp6*I. In five pig breeds, Shaziling, Taoyuan, *Duroc*, Landrace, and Yorkshire, the *A* allele frequency was dominant. Quantitative PCR revealed that porcine *CDC16* was expressed in ten selected tissues of 25-day-old Shaziling and Yorkshire piglets, and that the mRNA expression of *CDC16* in longissimus dorsi muscle of Shaziling was higher than that of Yorkshire. Expression levels of *CDC16* were highest in longissimus dorsi muscle followed by that in pancreas. CDC16 protein was detected in longissimus dorsi muscle of 25-day-old Shaziling and Yorkshire piglets by immunohistochemistry with

abundant protein expression index (P > 0.05). This study provides an insight into the role of porcine *CDC16* in the formation of meat.

Key words: Pig; *CDC16*; Chromosomal localization; Expression profile; Immunohistochemistry

