



## Analysis of *POU1F1* gene *Ddel* polymorphism in Chinese goats

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**ABSTRACT.** As a member of the POU-domain family, the *POU1F1* is a positive regulator for growth hormone, prolactin and thyroid-stimulating hormone  $\beta$ , by binding to target DNA promoters as a dimer in mammals. This study described the polymorphisms at the goat *POU1F1-Ddel* locus and analyzed the distribution of alleles in 15 indigenous Chinese goat breeds. The PCR-RFLP analysis showed a predominance of the  $D_1D_1$  genotype and the  $D_1$  allele, with average frequencies of 0.550 and 0.790, respectively, irrespective of goat utility type. The  $D_1D_2$  genotype was the second most frequent, with a mean frequency of 0.371. The distributions of genotypic and allelic frequencies at this locus were found to be significantly different among populations based on a Chi square test ( $P < 0.001$ ), suggesting that the breed factor significantly affected the molecular genetic character of the *POU1F1* gene. The genetic diversity analysis revealed that Chinese indigenous populations had a wide spectrum of genetic diversity at the goat *POU1F1-Ddel* locus. However, an ANOVA analysis revealed no

significant differences in gene homozygosity, gene heterozygosity, effective allele numbers, or polymorphism information content among meat, dairy, and cashmere utility types ( $P > 0.05$ ). This suggests that the goat utility types had no significant effect on the spectrum of genetic diversity.

**Key words:** Goat; *POU1F1* gene; Polymorphism; PCR-RFLP