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Identification of SNPs within the PRLR gene and effects on maternal behavior in sheep

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ABSTRACT. The prolactin receptor gene (*PRLR*) plays an essential role in maternal behavior. The aim of the study was to detect *PRLR* mutations in exon 10, using a polymerase chain reaction-single stranded conformation polymorphism method, and to determine the association between mutations in this region with maternal behavior traits in Chinese Hu sheep. Polymorphisms were detected only in the gene region amplified by the primer P3; three genotypes (AA, AB and BB) were observed. The genotype BB was predominant in the ewe study population, and genotype distributions were in agreement with the Hardy-Weinberg equilibrium ($P > 0.05$). There was no significant difference between observations for licking and kicking behaviors of AA and AB genotype individuals ($P > 0.05$), but there was a significant difference ($0.01 < P \leq 0.05$), when both were compared with the BB genotype. Significant differences were observed in suckling behavior between AA and AB genotype individuals ($0.01 < P \leq 0.05$), and the difference between these two genotypes and BB was highly significant ($P \leq 0.01$). No obvious difference was observed between

the genotypes in behavior of suckling rejection (P > 0.05). These results contribute to methods for selection and breeding through marker-assisted selection for maternal behavior traits in Hu sheep.

Key words: PRLR gene; SNP; Maternal behavior; Hu sheep

