



## Polymorphism in *PGLYRP-2* gene by PCR-RFLP and its association with somatic cell score and percentage of fat in Chinese Holstein

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**ABSTRACT.** Peptidoglycan recognition protein 2 (PGLYRP-2), which belongs to the *PGRP* family, is the only member that has no direct bactericidal activity but has N-acetylmuramoyl-L-alanine amidase activity. This feature of PGLYRP-2 indicates that it may play an important role in eliminating the pathogen associated molecular pattern (PAMP), such as peptidoglycan (PGN), which can reduce leukocytes in blood and lower somatic cell count (SCC) in milk. To investigate whether the *PGLYRP-2* gene is associated with mastitis and milk production traits in dairy cattle, the polymorphism of this gene was analyzed by PCR-RFLP in a population of 546 Chinese Holstein cows. A total of five single nucleotide polymorphism (SNP) loci were identified. The association analysis of a single SNP locus showed that the C+4867T locus was significantly associated ( $P < 0.05$ ) with somatic cell score (SCS). Surprisingly, all loci were significantly associated ( $P < 0.01$  or  $P < 0.05$ ) with percentage of fat. Association analysis between combined genotypes and SCS and milk production traits indicated that H2H2 was associated with higher percentage of fat ( $P < 0.05$ ). These findings demonstrated that SNPs in

*PGLYRP-2* gene were related to mastitis resistance and percentage of fat, and that H2H2 would be a useful genetic marker of combined genotypes for breeding of Chinese Holstein.

**Key words:** *PGLYRP-2* gene; Mastitis; Percentage of fat; PCR-RFLP; PCR-PIRA; Polymorphism