

Polymorphic CA microsatellites in the third exon of the bovine *BMP4* gene

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ABSTRACT. We examined the variation of the *BMP4* gene in four Chinese indigenous cattle breeds and investigated the association of this polymorphism with body measurement traits. Using PCR-SSCP and DNA sequencing, a polymorphic microsatellite was detected in the third exon of the bovine *BMP4* gene in 459 samples from four Chinese indigenous cattle breeds, Qinchuan, Luxi, Nanyang, and Jiaxian red. The two alleles were named A and B. Allele frequencies of *BMP4*-A/B in the four breeds were 0.939/0.061, 0.928/0.072, 0.929/0.071, and 0.938/0.062, respectively. Least squares analysis revealed significant effects of genotype on withers height in the four breeds, on hip height in two breeds (Luxi and Nanyang, $P < 0.05$) and on chest circumference in Qinchuan ($P < 0.05$), while no significant effects of genotype on body length and rump length were found. These results can be applied to marker-assisted selection of Chinese cattle breeds, but a much larger number of animals will be needed for association analysis.

Key words: *BMP4* gene; Body measurement traits; Cattle; Microsatellite