

## Association between a CBG non-synonymous SNP and meat quality traits of Berkshire pig

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Corticosteroid binding globulin (CBG) is alpha-globulin protein with corticosteroid binding affinity. CBG also binds several steroid hormones at high rates which mediates the physiological functions of the steroid hormones. In the present study, we demonstrated the expression of *CBG* gene from various tissues of four pig breeds including Berkshire, Duroc, Landrace, and Yorkshire. Up-regulation of *CBG* mRNA was detected in liver of all four breeds. Interestingly, the mRNA of *CBG* in liver of Berkshire showed the highest expression compared with that of other breeds. We also examined single nucleotide polymorphisms (SNPs) of *CBG* and the *CBG* SNP *c.882 A>G; 265I>V* was found from the Berkshire liver, and then we analyzed the association between SNP and various meat quality traits. The SNP was significantly associated with backfat thickness, pH24hr, CIE a\*, CIE b\*, water holding capacity, fat content, moisture content, protein content, cooking loss, and shear force. We also analyzed the association between genotype of *CBG* and meat quality traits depending on sex. The SNP of *CBG* showed significant differences on various meat quality traits including backfat thickness, pH24hr, CIE a\*, CIE b\*, water holding capacity, fat content, moisture content, protein content, drip loss, and cooking loss in gilt whereas the SNP was only involved in cooking loss and shear force in barrow. In conclusion, we suggest that the analysis of SNP might be a molecular maker for improvement of pork production.

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