

Abstract

The objective of this study was to study the association of promelanin 17 (*PMEL17*) and melanocortin 1 receptor (*MC1R*) gene with characteristics of black boned chicken. Two molecular DNA markers (*PMEL17* and *MC1R*) were used to genotyping in 166 black boned chickens and 54 control group chickens. The results showed that the molecular DNA markers were significantly associated with characteristics of black boned chicken. The *PMEL17* and *MC1R* markers could be identified the black boned chicken with 72.84 and 82.02% accuracy, respectively. Moreover, the *MC1R* marker was significantly associated with breast muscle color trait of black boned chickens ($P=0.0002$). The chickens with the E/E genotype had darker the breast muscular color values than those the chickens with the E/e genotype. The results indicate that these genetic markers are related to the black boned chicken characteristics.

