Relationship between *ATP2B1* gene polymorphisms and bone and blood plasma parameters of laying hens

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The aim of study was to analyze the relationship between selected bone and blood parameters and polymorphisms of the gene encoding PMCA1 protein, which serves as one of transport systems enabling transfer of calcium across the osteoblast membrane and thus participate in ossification of bone tissue. 240 ISA Brown laying hens were used in the experiment. SNPs in intron 7 of A654T, exon 8 of C61T and C80T were analyzed. The detected genotypes were associated with femoral parameters (bone strength, bone length, bone mass, calcium content) and calcium blood plasma concentration. Statistical analysis results suggest that the C80T polymorphism significantly affected the length and mass of the femur, with the largest bone length and mass determined for CC genotype compared to CT and TT. A statistically longer femur was observed among the groups in the CT genotype of C61T polymorphism. There were no relationships between the determined genotypes, bone calcium content and plasma calcium concentration.

Key words: femur, PMCA1, SNPs, hens

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