

***Obese* gene polymorphism in Pietrain and Large White pigs after a divergent selection**

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ABSTRACT. The aim of the present study was to identify polymorphisms in the *leptin* gene of 112 pigs and compare the maternal and paternal lineage of Pietrain and Large White breeds that underwent a divergent selection for over 30 years. DNA samples extracted from the blood of these animals were amplified by polymerase chain reaction and genotyped by restriction fragment length polymorphism using the restriction enzyme *Hinfl*. The data were statistically analyzed by the chi-square test. The results showed that 87.5% of the animals were genotype TT, where 31.25% were Large White paternal lineage, 31.25% were Pietrain paternal lineage and 25% were Pietrain maternal lineage. The TC genotype appeared in 12.5%, where 10% were Large White, 0.5% were Pietrain paternal lineage and 2% were of the same maternal lineage breed; CC was not observed. As for the allele frequency, 93.75% of the T and 6.25% of the C allele were found. In Pietrain maternal and paternal lineages, it could not be determined that the *Obese* gene had been fixed in the maternal lineage. However, in the Pietrain and Large White paternal lineages there was a statistically significant difference,

suggesting that the C allele is associated with growth and daily weight gain and that the low frequency of C in the Pietrain lineage is related to low rate of body fat, a typical feature of this breed.

Key words: Quantitative trait loci; *Leptin*; Polymerase chain reaction; *Obese* gene; Restriction fragment length polymorphism