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Genetic Variation and Association Study by Microsatellite Markers Genotyping with Economic Traits in Korean Native Pigs and American Yorkshire Pigs

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The Korean native pig has been reported that it get a low meat quantity and high fat accumulation like backfat thickness. Using microsatellite markers for genetic mapping, genetic variation and association test on economic traits were researched in pigs. In this study, F2 population composed of 174 individuals from an intercross between Korean Native pigs and American yorksire pigs was genotyped by SW1943 on chromosome X. Totally, 4 alleles (120, 122, 126 and 132 bp) and 10 genotypes were detected in the population, of which the AA (120/120), AB (120/122), AC (120/126), AD (120/132), BB (122/122), BC (122/126), BD (122/132), CC (126/126), CD (126/132) and DD (132/132) types were observed. Especially, we founded that specific genotypes are associated with economic traits such as birth weight, backfat thickness, cholesterol level in blood. Pigs of allele A or C showed a increasing in weights and a reducing in backfat thickness, tatal-cholesterol and LDL-cholesterol. On the other side, Pigs of allele D showed a reducing in weights and a increasing in backfat thickness, tatal-cholesterol and LDL-cholesterol.

Key words: Microsatellite marker, pig, korean native pig, economic trait

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Characterization of Single Nucleotide Polymorphisms in Candidate Gene from Swine

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Seyeral candidate gene analyses have identified important chromosomal regions and major genes associcated whit traits of economic interest in the pig. The pig industry is actively using some of these information to improve swine production by marker assisted selection (MAS). This study was conducted to identify useful single nucleotide polymorphism and determine their assiociation with economically important traits in pig population.

Key words: MAS SNP, marker pig, economic trait.