

Archara Dechasiripong 2008: Detecting Polymorphism in Promoter Exon 1 and 3' non – coding region of Myogenin Gene in Porcine. Master of Science (Agricultural Biotechnology), Major Field: Agricultural Biotechnology, Interdisciplinary Graduate Program. Thesis Advisor: Associate Professor Voravit Siripholvat, D.Agr. 56 pages.

Myogenin is an essential gene for muscle development. The polymorphism in Promoter, Exon 1 and 3' non – coding region and sequencing studies of 3' non – coding region by using restriction enzyme is investigated. In this study, blood sample collected from six different pig breeds including Duroc (D, 14 pigs), Duroc × Pietrain (D x P, 19 pigs), Pietrain (P, 15 pigs) Large White (LW, 19 pigs), Landrace (LR, 15 pigs) and Meishan (MS, 7 pigs) were collected and used for DNA isolation. DNA was amplified by specific primer for Promoter, Exon1 and 3' non – coding region giving 395, 351 and 353 bp fragment, respectively in all pigs. PCR product of Promoter, Exon 1 and 3' non – coding region digested with *Apa*LI, *Hin*fl and *Msp*l, respectively. Promoter and Exon 1 resulting the same size of DNA fragment in all pigs but 3' non – coding region digest with *Msp*l resulting in either undigested 353 bp fragment (allele A) or two digested fragments of 134 and 219 bp (allele B). The frequencies for AA, AB and BB genotype were: 0.071, 0.142 and 0.787 in D; 1.000, 0 and 0 in DxP; 0.133, 0.200 and 0.667 in P; 0.053, 0.211 and 0.736 in LW; 1.000, 0 and 0 in MS, respectively. The 3' non – coding region sequence of the Myogenin gene was found specific to transversion at A10T in D and transition at T278C in LW. Also, The 4 positions mutation was observed in MS: insertion at A27 and A130, transversion at C82A and transition at G170A. Moreover, transition at G134A position in MS and D x P causes a change in the stop codon which inhibit the translation of b-HLH transcription factor

Archara Dechasiripong

Student's signature

Voravit Siripholvat 26 / 05 / 08

Thesis Advisor's signature