

Myostatin Gene of Indonesian Local Sheeps

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Abstract:

Myostatin or growth and differentiation factor 8 (GDF-8) is a member of transforming growth factor-8 (TGF-8) superfamily of growth and differentiation factors that is essential for proper regulation of skeletal muscle mass in vertebrate, that is expressed specifically postnatal. In mutations condition suggesting gene to be a "loss of function" that give an effect in increasing skeletal mass, due to increasing the number of muscle fibres (hyperplasia) or the size of muscle fibres (hypertrophy). Some mutation that occurs not in a loss of function, might be improve their ability to promote muscle growth or even in decreasing muscle size. The PCR-SSCP technique was used to identify of nucleotide mutation in promoter region and intron 2 of myostatin gene of some local sheep in Indonesia. A total of 145 blood samples were used in this study comprised four localities, i.e. Cibanteng (43), Cilebut (26), UP3 Jonggol (38) and Wanaraja (38). The result showed four types promoter region of myostatin gene based on PCR-SSCP (type K, L, M and N). The K and M types were found in all population, the L type was not found in Wanaraja population and N type was not found in Cilebut population. In the region of intron 2 we found five deference types of gene. There are gene type of A, B, C, F and G. The A gene type from intron 2 only found in Cibanteng population. From sekuensing data, we found promotor area mutation in gen type K, M, and N. There are 34 mutation point in gen type N, 8 mutation point in gen type K, and 4 mutation point in gen type M. Those mutation gen described polymorphism in Indonesian local sheep.

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