

## GENETIC POLYMORPHISM OF MSTN GENE IN KALEHKOCHI SHEEP BY PCR-RFLP METHOD

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**I N T R O D U C T I O N :** Meat quality is one of the important economic traits in domestic animals. Myostatin or growth and differentiation factor 8 (GDF8) has been identified as the factor causing a phenotype known as double muscling in which a series of mutations render the gene inactive, and therefore, unable to regulate muscle fibre deposition. Kalehkoohi Sheep is one of Iranian Small Sheep Breed who is being reared in Iran for meat Purpose. Due to the role of myostatin gene in muscle development, the objective of this study was to analyze a coding region containing mutations which potentially altering the myostatin gene expression.

**M A T E R I A L S A N D M E T H O D S :** DNA from blood samples of ninety Six Kalehkoohi sheep was extracted and used to amplify a 337-bp fragment in myostatin gene. Restriction fragment length polymorphism (RFLP) of the PCR product was performed by addition of *Hae*III enzyme to the completed PCR reaction. PCR-RFLP genotypes were analyzed by Popgene 32 software.

**R E S U L T S A N D D I S C U S S I O N :** Genotype frequencies of MM, Mm and mm were detected as 0%, 0.198 and 0.802 respectively. Results indicated that the Kalehkoohi sheep was polymorphic for myostatin gene and it was at Hardy–Weinberg equilibrium. The presence of M allele and existence of heterozygote sheep for MSTN locus in this population showed that Kalehkoohi sheep has good diversity for improving meat related trait and it can be a favorable background to reach the goals. Although frequency of M allele in our population is low but it should be considered that we just investigated one mutation responsible for double -muscling in this locus while there are different mutation which caused double- muscling phenotype.

**Keywords:** Polymorphism, MSTN gene, Kalehkoohi sheep, PCR-RFLP

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