

GENETIC POLYMORPHISM OF BMPR-IB GENE IN IRANIAN KALLEHKOOSHI SHEEP USING PCR-RLFP TECHNIQ

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INTRODUCTION

Improving the lambing percentage in sheep could be one of the key factors in increasing farm profitability. Major genes for little size trait provide opportunities for large and rapid increases in the efficiency of sheep production. The BMPR-IB locus is located in the region of ovine chromosome six. Mutation in the bone morphogenetic protein receptor 1B (BMPR-1B) gene increases ovulation rate and litter size in sheep. Kalkoohi Sheep is one of Iranian Small Sheep Breed who is reared in central region of Iran for meat Purpose .The present study was undertaken to find out the polymorphism of the BMPR-IB gene in this breed.

MATERIALS AND METHODS

Blood samples were collected from 79 Kalkoohi sheep from tree different herd. Genomic DNA was extracted from blood sample using genomic DNA purification kit. Spectrophotometer was used for investigating quality and quantity of DNA. The PCR products were digested by restriction endonuclease AvaII. Digested products were separated by electrophoresis on 3% agarose gel and visualized after staining with Supper Red Gel on UV transillumination. Data analysis was done using Popgen32 software in this population.

RESULTS AND DISCUSSION

FecB mutation was present in this population. Frequencies of homozygote (BB), heterozygous (B+) and wild type (++) were 0, 0.43 and 0.57 respectively. The population was not found to follow Hardy-Weinberg equilibrium. Genetic polymorphism in BMPR-IB Locus and heterozygosity (0.43) showed that this population has genetic diversity and good potential for breeding plan. Regarding the records of litter size in this breed it may be concluded that the genetics factor controlling litter size is related to the mutation, which is reported in Booroola major gene.

Keywords: Polymorphism, BMPRIIB gene, Kalkoohi sheep, PCR-RFLP

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