

## Abstract

One of animal breeding advantages is recognition of genes which are beneficial for productive features and also are named candidate genes. *FABP4* gene is obvious in adult fat cells and also is so important in biological processes which are related to lipids such as interface in metabolic paths and increasing fat tissues, and as a result strong will to compound with fatty long acids. In current study for existence of polymorphism in exon 3 of *FABP4* gene and its relation to growth traits. Samples of 45 sistani and Dashtiari cows from sistani and baluchestan have been provided randomly from abdominal vein . DNA extracted from full blood and its quality investigated by electrophoresis of agarose 1% gel. A polymerase chain reaction was done by using a special primer pairs. Based on the patterns of size of bands, genotype of cattel was determined that it was resulted from endonuclease enzyme digestion *NlaIII* (RFLP) on the PCR products and electrophoresed on the agarose 2.8%. Genetic and population structures in *FABP4* region was analyzed by POPGENE 3.2 software. The patterns of band led to the identification of three genotypes AA, AB and BB with frequency of 0.67, 0.3, and 0.03 in Sistani and with frequency of 0.73, 0.27 and 0 in Dashtiari, respectively. The frequency of allele A and B Alleles in exon 3 of *FABP4* were 0.82 and 0.18 in Sistani and 0.87 and 0.13 in Dashtiary cattle, respectively. The both of population demonstrated deviation from Hardy-Weinberg equilibrium in *FABP4* ( $P < 0.05$ ). Heterozygosity index includes Shanen index (I), Nei index, observed and expected heterozygosity investigated 0.48, 0.30, 0.3 and 0.30 in Sistani population and 0.39, 0.11, 0.27 and 0.24 in Dashtiary population, respectively. The association between the pattern of genotypes and growth-related traits explained a significant effect with body weight in 6, 9 and 12 months, but it was not significant effect on birth weight and weaning weight.

**Key words:** *FABP4* gene, Sistani and Dashtiary cattle, PCR-RFLP, Growth related traits



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**Study of polymorphism of *FABP4* gene and its association with  
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