DOI : 10.5958/2277-8934.2019.00038.9 *Vol 26 No 3, p 245-249*

ANALYSIS OF BETA CASEIN GENE POLYMORPHISM IN INDIAN CAMEL BREEDS

S.A. Jadhav[1], U.D. Umrikar[1], M.P. Sawane[1], V.D. Pawar[1]
R.S. Deshmukh[1], S.S. Dahiya[2] and S.C. Mehta[2]

[1]Bombay Veterinary College, Parel, Mumbai- 400 012, Maharashtra

[2]ICAR-National Research Centre on Camel, Post Box-07, Bikaner-334001, Rajasthan, India

ABSTRACT

The present study was carried out on 118 camels belonging to the 4 major breeds *viz*. Bikaneri, Jaisalmeri, Kachchhi and Mewari to detect polymorphism in the promoter region of β-casein gene by PCR-RFLP. The PCR amplification of 659 bp fragment spanning the promoter (-428bp) and the 5′ flanking region (+231) of β-Casein gene was carried out and restriction digestion with *Hph*I was done to study the transition g.2126A>G in the promoter region of dromedary camel. This transition removes the restriction site for the *Hph*I. The restriction patterns were characterised by the 2 fragments of 608 bp and 51 bp (GG), 4 fragments of 608 bp, 352bp, 256 bp and 51 bp for the heterozygous (AG) and 3 bands of 352bp, 256 bp and 51 bp (AA). The genotype frequency in the Indian dromedary was observed as 0.195, 0.525 and 0.280, respectively for the GG, AG and AA genotypes. The allele frequency was 0.458 and 0.542 for the G and A alleles, respectively. All the 4 Indian dromedary breeds were polymorphic for this variation. This transition of amino acid in the promoter region has impact on the affinity of the TATA box binding site in the gene transcription process. However, further investigations are required to verify the influence of this allelic variant in the gene regulation process.

Key words: Beta-Casein, camel, dromedary, milk, polymorphism