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Investigation of bovine lymphocyte antigen (BoLA-DRB3) by PCR-based RFLP in buffalo population of Khuzestan province

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ABSTRACT

MHC locus codes antigens and leukocyte surface proteins which have roles on immune reactions and identification of foreign proteins. In cattle this locus is known as Bulla and is composed of three classes of genes: CLASS I, CLASS II and CLASS III and is located on short arm chromosome 23. Each of these classes of genes has complex and various genes and each gene may have dozens of alleles. The objective of this study was to study the variation of exon 2 of locus BoLA-DRB3 in buffalo population in Khuzestan province. In this study, the Heminested-PCR method was used to amplifing this exon. In order to determain the level of polymorphism, blood sample were collected from 80 buffalos in Shadegan, Ahwaz, Dashte azadegan, Dezfoul and Shoshtar cities. DNA extraction and exon 2 of the MHC gene was amplified by specific set of primers for this gene to produce a 284 bp fragment. The amplified fragments were digested with *Hae*III and *Rsa*I restriction endonuclease. Digested products were separated and were stained by vertical electrophoresis on 8% Polyacrylamide gel. After digestion with *Hae*III and *Rsa*I nine and ten alleles (restriction digestion pattern) were obtained at this locus respectively. Alleles a and b with 34.37 and 23.75 percent were the most frequent alleles when digested with *Hae*III and alleles a and b with 20 and 30 percent frequency were the frequent alleles when digested with *Rsa*I. We identified 17 genotypes using each of the restriction enzymes in this population.

Key Words

Polymorphism, MHC, Buffalo, PBR

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