

**INTERFERON ALPHA AND INTERFERON BETA GENES SEQUENCE DIVERSITY IN PAKISTANI BEETAL GOATS**

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**Abstract**

Goat considered as an important member with unique biological component of livestock and an important economic resource around the world. Beetal goat is distinguish breed in Pakistan due to its superior production. The major histocompatibility complex (MHC) located on chromosome 23 of goat plays significant role in immune system. We sequenced the MHC Class I genes, interferon alpha and interferon  $\beta$  (IFN- $\alpha$ , IFN- $\beta$ ) in 35 samples of Beetal goat of Pakistan. In 361 bp fragment of IFN- $\alpha$  three mutations (A>G) were observed at position 83, 127 and 144 resulting in amino acid changes when compared with reference sequence accession No. XM005683621. The IFN- $\beta$  was found more conserved as single non-synonymous mutation (G>C) that found at 258 position in 415 bp sequences of 40 animals comparing with reference sequence accession No. JX458085. This is the first report on MHC genes sequences in Beetal goat of Pakistan and the findings may lead to identification of molecular markers for selection of animals with better disease resistance.

**Key Words:** Major Histocompatibility Complex, IFN- $\alpha$ , IFN- $\beta$ , Beetal goat