

عنوان مقاله:

Investigation of the target genes of BLV miRNAs and the expression levels of miR-BF-۳p and miR-B۲-۵p in cattle infected with Bovine Leukemia Virus

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خلاصه مقاله:

Bovine Leukemia Virus (BLV) is an oncogenic retrovirus of the genus Deltaretrovirus. The genome of BLV encodes a cluster of ۱۰ mature microRNAs (miRNAs). Considering the importance of miRNAs in regulating gene expression, it seems that each of the miRNAs of BLV plays a vital role in the process of pathogenesis and tumorigenesis of the virus. First, sequences of each of the miRNAs of BLV were selected and downloaded from the miRBase database. The sequences were then investigated using TargetScan and miRWalk to identify target genes of each of the mature miRNAs of the virus. Second, the expression levels of the two miRNAs with the highest number of target genes in B lymphocytes and lymphoid tissues were evaluated using qPCR and were compared between cattle with different forms of BLV infection: PL form was compared to aleukemic (AL) form (Group ۱) and BLV+ with normal lymph nodes were compared to lymphosarcoma form (Group ۲). We identified a total of ۱۵۹۵ target genes of the micro RNAs. The miRNAs with the highest target genes included miR-BF-۳p with ۷۶۰ and B۲-۵p with ۱۰۲ target genes. In the second phase, miRNA expression in BLV-infected animals was investigated. The Fold Change (FC) values for miR-BF-۳p and miR-B۲-۵p in group ۱ were ۲۲ and ۶۷, respectively. In the second group, the FCs for miR-BF-۳p and miR-B۲-۵p were ۴۷ and ۱۳۳, respectively. The expression was significantly higher in persistent lymphocytosis (PL) cattle in group one and lymphosarcoma cattle in group two.

کلمات کلیدی:

Bovine leukemia virus, miR-B۲-۵P, miR-BF-۳P, Retrovirus, Target gene

