

عنوان مقاله:

COMPARISON OF VACCINAL AND REGIONAL CIRCULATING BOVINE EPHEMERAL FEVER VIRUS BASED ON ANTIGENIC RELATIONSHIP AND CROSS-NEUTRALIZATION TEST

محل انتشار:

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تعداد صفحات اصل مقاله: 1

نویسندگان:

Shokoofeh Almasi - *Razi vaccine and serum research institute, Agricultural Research, Education and Extension Organization (AREEO), Karaj, Iran*

Mehran Bakhshesh - *Department of viral animal disease research and diagnosis, Razi vaccine and serum research institute, Agricultural Research, Education and Extension Organization (AREEO), Karaj, Iran*

Shahla Shahsavandi - *Razi vaccine and serum research institute, Agricultural Research, Education and Extension Organization (AREEO), Karaj, Iran*

خلاصه مقاله:

Background and Aim: Bovine Ephemeral fever is an arthropod-born and disabling disease of cattle and water buffaloes. The BEFV is classified as a -ssRNA in the genus Ephemerovirus, of the family Rhabdoviridae. We have analyzed and compared the whole glycoprotein G encoding gene and its 4 antigenic sites in BEFV isolate isolated during 2012 in Iran and commercially available vaccinal strain applied in Iran. **Methods:** The One-Step RT-PCR reactions were carried out and entire G gene sequences were analyzed. Hyperimmune sera against vaccinal and Iranian isolate were raised in rabbit. Then cross-neutralization test was performed and R value was calculated in according to Archetti formula. **Results:** The analysis of the Iranian isolate and vaccinal strain showed 95.6% identity, with 17 amino acids substitutions that 4 of them occurred in antigenic epitope sites. The antiserum against vaccinal strain neutralized the Iranian isolate 4 times lower than of the homologous strain. The R value among two viruses was 34.8% , so classified into distinct subtypes. **Conclusion:** Residue 218 (R) in G3 epitope is more important substitution than other amino acid variations, and we find that it has been changed to K in Iran isolate. Other substitution occurred at positions 223, 277 and 503 in known epitopes. These amino acid substitutions between Iranian and vaccinal strain have affected the immunity induced by commercial vaccine against field strains. Relatively low R value indicates on insufficient efficiency of commercial used vaccine and implying on revision of how to use the vaccine, or developing a vaccine from the native isolate of the country.

کلمات کلیدی:

bovine ephemeral fever, R value, antigenic variation

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