

Complete nucleotide sequence of the group-reactive antigen VP7 gene of bluetongue virus

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The sequence of the double-stranded RNA segment S7 of bluetongue virus serotype 10 (encoding the VP7 which elicits group-specific antibody, Huismans and Erasmus, 1981) was determined from a complete cDNA clone inserted into pBR 322. The S7 RNA was deduced to be 1156 base pairs in length and coded for a 349 amino acids protein (38,548 Daltons; net charge + 1 at pH 7.0). The 5' non-coding region is short (17 base pairs) while the 3' noncoding region is relatively long (96 base pairs).

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      N D T I A A R A L T V M R A C A T L Q E A R I V L E A N V H E I L G I
GTAAAACTATAGAGATGGACACTATGCCCGCAAGAGCACTCACTGTGATGCGAGCATGTGCTACGCTTCAAGAGGCCAAGAATTGTGTGGAAAGCCAATGTGATGGAAATTTGGGGA 120
      A I N R Y N G L T L R G V T M R P T S L A Q R N E N F F H C L D M H L S A A G I
TAGCTATCAATAGGTACAATGGACTCCTTTACGAGGAGTGAAGATGCGCCGACCTGGTTAGCACAAAGAAATGAGATGTTTTTTATGTGTTTTGGATATGATGCTGTCTGCTGCTGGGA 240
      N V G P I S P D Y T Q H M A T I G V L A T P K I P F T T E A A N K I A R V T G E
TAAATGTTGGACCGATATGCCGAGACTACTCAACATATGGCTACGATTGGTGTACTAGCAACACCGGAAATACCTTTTACAACGGAAAGGGCGAATGAAATAGCTCGAGTACTGGGG 360
      T S T N G P A R Q P Y G F F L E T E E T F Q P G R N F M R A A Q A V T A V V C G
AGACTTCGACATGGGGCCAGCGCGTCAAGCCTTATGTGTTCTTCTTGAACCTGAGGAAACCTTCCAACAGGGAGGTGGTTTCATGCGCGCCGCTCAAGCAGTAACCTGCGATGTGTGCG 480
      P D M I Q V S L N A G A R G D V Q Q I F Q G R N D P H N I Y L V H R R I E N E A
GTCCGGATATGATCAAGTGTCACTTAATGCTGGAGCGAGGAGATGTACAACAGATATTCAGGGTGTAAATGATCCCATGATATATTGATGTGGAGGAGAAATCGAAAACCTTG 600
      H A Q G N S Q Q T Q A G V T V S V G Q V D N R A G S I I A W D G S A A L H V H N
CGATGGCGCAAGGTAACTCACAGCAAACTCAAGCGGTGTGACTGTGCAAGTGTGTGGAGTTGACATGAGGCGCGAGCATTATAGCGTGGGATGGACAGCCCGCCCTGCATGTGCATA 720
      P T C G N A H V Q I Q V V F Y I S H D K T L N Q Y P A L T A E I F N V Y S F R D
ATCCGACACACAGAAATCGATGTGTCAAAATACAGGTTGTGTTCTATATATCTATGGATAAAACCTTTAAACCAAGTACCCCGCTTGAAGTGTGAGATTTCAAATGTTTACAGCTTCAGGG 840
      H T W H G L R T A I L N R T L L P N H L P P I F P P N D R D S I L T L L L L S T
ACCACACATGGCATG99CTAAGAAACGGCGATATTAACACAGAACCCACACTGCCAAACATGCTGCCACCAATCTTCCACCAATGATGGAGATAGCATCTTAACTCTTCTACTTTTACTA 960
      L A D V Y T V L R P E F A I N G V N P H P G P L T R A I A R A A Y V *
CACTTGTGATGTTTTACACTGTTTTAAGCGCAGAGTTTTGGGATTCACGGCGTAAATCCGATGCCAGGGCCGCTCACAGCTGCTATTGCGCGCCCGCCCTATGTGTAGTCCCACTTCCAGC 1080
      GGTGTGGGTTACATATGCGGGTGTGTCCGTTGTGGGAAATATGTAACCCATTTAAAGCGTCTCTTAGATTACACTTAC 1156
    
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References

Huismans, H. & Erasmus, B.J. (1981). Identification of the serotype-specific and group-specific antigens of bluetongue virus. *Onderstepoort Journal of Veterinary Research* **48**, 51-58.