
The sequence of cDNA of bovine coronavirus 32K nonstructural gene

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In addition to the four structural proteins of bovine coronavirus a minimum of four virus-encoded nonstructural proteins are found in infected cells. The nucleotide sequence of the NS 32 is presented. The gene is situated immediately upstream from the E3 gene and terminates within the NS32-E3 conserved intergenic region¹. An ORF extends from nucleotides 15 to 845 and the computer generated translational product of 32K is in agreement with our observations (unpublished) and reports for other coronaviruses². In addition to the conserved intergenic region (single underline) this gene shares homology (65% at the nt level, 45% at the aa level) with the ORF-1 in mRNA2 of MHV-A59².

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  1  TCTAAACTTTAAGAATGGCAGTTGCTTATGCAGACAAGCCTAATCACTTTATTAATTTTC
  61  CACTTACCCAGTTTGAGGGTTTTGTGTTAAATTATAAAGGTTTACAATTTCAACTTCTCG
 121  ATGAAGGAGTGGATTGTAAATACAAACAGCGCCGCACATTAGTCTTGCTATGCTGGATA
 181  TTCAGCCTGAAGACTATAGAAGTGTGATGTTGCTATTCAAGAAGTTATTGATGACATGC
 241  ATTGGGGTGAGGGCTTTCAGATTAATTTGATAACCCCATATCCTAGGAAGATGCATAG
 301  TTTTAGATGTTAAAGGTGTAGAAGAATTGCATGATGATTTAGTTAATTACATTCGTGATA
 361  AAGTTGTGTGCTGACCAATCCAGGAAATGGATTGGACATTGCACCATAGCCCAACTCA
 421  CGGATGCTGCACTTCCATTAAGGAAAATGTTGATTTATAAACAGCATGCAATTCAATT
 481  ATAAAATCACTATCAACCCTCATCACC GGCTAGACTTGAAATAGTTAAGCTTGGTGCTG
 541  AAAAGAAAGATGGTTTTTATGAAACCATAGTTAGCCACTGGATGGGAAGTCGTTTTGAAT
 601  ATAATCCACCCACTGATAAGCTAGCTATGATTATGGGTATTGTTGTTTCAGAAGTGGTGC
 661  GTAAGAGCTAGAAGAAGGTGATCTTCCCGAGAATGATGATGATGCTTGGTTTTAAGCTAT
 721  CGTACCATTATGAAAACAATTCTTGGTTCTTTCGACATGTCTACAGGAAAGTTCTTATTT
 781  CCGTAAGTCTTGTAATTTAGATTGTAATTGTTGGGGTTTTATGAATCTCCAGTTGAAG
 841  AAGACTAAAC

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References

1. Parker, M.D. et al (1989) J. Gen. Virol. 70:155-164
2. Luytjes, W. et al (1988) Virol. 166:415-422