The complete nucleotide sequence of bovine rotavirus C486 gene 4 cDNA

A.A.Potter*, G.Cox, M.Parker and L.A.Babiuk

Veterinary Infectious Disease Organization, 124 Veterinary Road, Saskatoon, Saskatchewan S7N 0W0, Canada
Submitted February 24, 1987

Accession no. Y00127

A clone carrying the full length cDNA of bovine rotavirus C486 genomic segment four was isolated from a pBR322 library and its nucleotide sequence determined by the chain termination method. The cDNA is 2364 base pairs in length and contains one long open reading frame coding for a protein of 776 amino acids with a molecular weight of 86,516. The 5'- and 3'-conserved sequences of rotaviruses, GGCUUUAAAA and AUGUGACC respectively, are present at bases 1-12 and 2357-2364, with the U at position 5 changed to an A in isolate C486. The initiation region follows Kozak's consensus sequence for strong initiation, with a purine at base 7 and a G at base 13. The major trypsin cleavage sites responsible for enhanced *in vitro* growth (1) are found at amino acids 241 and 247 (underlined). When the coding region is compared to the partial sequence of Sall rotavirus gene 4 (2), 97.3% of the amino acids are shared with 97.1% nucleotide homology.

```

1  GGC TATAAAATGGCTTCACTCATTTATAGACAGTGGCTTACTAATTCATACAGTAGAAGCTTCAGATGAAATCCAAGAAATGGATCGACTAAGACTCAAAACS
107 TTACCCTTAATCCAGGACCGTTCCGCGCAACAAATACGCTTCAGTTAATTGGGACCTGGTGAACGAATGACTCAACTACAGTGAACCAAGTCTGATGGAC
213 ATATCAACCAACGACTTTTATCCACCTGTAACTTATGGATGTTGTAGCACCACGAACGCGGGGGTGGTAGATCAAGGTACGAACAATACAAACAGATGGTTA
319 GCGACAATATTAATTAACCAATGTACAGCAAGTTGAGCGAACATATACATTATTTGGGCAACAAGTTCAAGTAACAGTATCAAAATGATTCAGACACAAGTGA
425 AGTTTGGGATCTAAGTAAGCAGACACAAGATGGTAATTATTCACAACACGGTCTCTACTGTCAACACCGAACTGTATGGAGTGATGAACATGGAGGTAAT
531 TTACACTTATAATGGAGAGACACCGAACGCACTACTGGTTACTACTCTACAACCTAAGTTTGACACTGTAAACATGACAGCATATTGATTTTTATATAATTCCA
637 TTAGCACAAGAGCAAAATGCAGTGAATACATAAATATGGATTACCACCAATACAAAATACGAGAAATATCGTACCAGTTTCGATAGTATCAAGGAATATTGTAT
743 ATACAAGAGCACAACCTAATCAAGACATAGTGGTATCAAAAATCTCATTATGGAAGAGATGCAATATAATAGAGATATAGTGAAGATTTAAATTTGCTAACTC
849 AATCATATAAATCAGGGGATTTGGGATATAAATGGTCAGAAGTGTCAATTAACCAAGCTAATTTATCAGTACACATATACCAGAGATGGTGAAGAAGTTACTGCACAT
955 ACTAGTGTTCAGTAAATGGAATAATGATTTTAATTAATGATGGTGGATCATTACCGAGTATTCGTAATATCAAAATATGAAGTATTAAGGAAATCTCTTTG
1061 TGTATATAGACTCTGGGAGATTCACAAGCATTTAGAAACATGGTATATGACGCTCGTTGGCAGCGGATTTAAATTCGGTAATGTGTACAGGAGGTGACTATAG
1167 TTTTGGCGATTCGAGTTGGTAAATTCAGGTATGACTGGGGGTGCTGTCATTGCAATCAGCAGGTGTAACCTTTATCAACGCGATTTACAGATTCGATCATTA
1273 AATTCAGTGAAGTTAGATTAGATTATCAGTGAAGAACCSCGCTCTCAATTCTACGACAGAGTAAAGTGGATTGTAGGACTCCAGCGGCAAAACCGAATA
1379 ATTCACAAGAAATATTATGAGATAGCTGGGAGATTTTCATTAATATCACTCGTACCCTCAATGATGATTATCAGACACCAATAAATAAATTCAGTCACTGTACGACA
1485 AGATTTTAGAACGACAATTAGGAGAACTAAGAGATGAATTTAACAATTTATCAACAACATCGCTATGTGCAACATGATAGATCTTGCCTTACTACCGGTAGACATG
1591 TTCTCAATGTTTTCAGGATTAAGAGTACAATTGACGCGCAAGTCTATGGCAGCAATGTATGAAGAGATTTAAAAAGTCAAGTCTCCTAACTCAGTGTCAA
1697 CGCTCACTGATTCATGTTCTGTGATGAGCATCATCAATTTCTAGAAGTGCATCGGTTAGATCAGTTAGTTCACTGCTCAGCTTGGACGGAAGTATCTAACATTAC
1803 ATCAGATATTAATGTGACAACGAGCTCGATCTCACAGACATCAACAAAAGCAGAAGTTAAGACTAAAAGAAATGGCAGCTCAACCGGACGGTATGAATTTT
1909 GATGATATATCAGCAGCAGTACTCAAGACTAAAATGTATAAATCAACCCAGTTAAATACAAATACATTGCCGGAATAGTAAGTGAAGCTTCAGAAAAGTTATAC
2015 CAAATAGAGCGTACCGTGAATTAAGATGATGAAGTGTAGAGGCTAGTACTGATGTTAAATATTTCCGTTACAAGGTGAAGACCATTTTGAAGAGATTCCATTAC
2121 GATGTACAAATTCGCTGACTTGTGACTGACTCACCAGTTATATCGGCAATAATTGACTTTAAACTCTTAAGAAATCTAAATGATAATTACGGAATAAGCAGACAA
2227 CAAGCACTAAATCTCTAAGATCTGATCCGCGAGTATTACGTGAATTTATTAATCAGGATAATCCAATAACGAAATAGAATAGAAAGTTTGATTAATGCAATGTC
2333 GCTTGTAGCAACTGAACAGAGGATGTGAC

```

*To whom correspondence should be addressed

Published with the permission of the Director of the Veterinary Infectious Disease Organization as journal series no. 53.

References

1. Kalica, A.R., Flores, J. and Greenberg, H.B. (1983) *Virology* **125**, 194-205.
2. Lopez, S., Arias, C.F., Bell, J.R., Strauss, J.H. and Espejo, R.T. (1985) *Virology* **144**, 11-19.