

Coronavirus MHV-JHM: nucleotide sequence of the mRNA that encodes the membrane protein

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The complete sequence of the membrane protein of coronavirus MHV-JHM is presented and compared with that of MHV-A59 (1). Within the coding region of 684 nucleotides there are 21 nucleotide changes which result in 7 aminoacid changes in a protein of 228 residues (mol. wt. 26,000). These aminoacid changes are conservative, both within the potential membrane (—) and non-membrane domains of the protein. The potential O-glycosylation sites (∇) at the N-terminus of the polypeptide are also conserved. In the 5' non-coding region, the homology sequence TCTAATCCAAAC is found at or near the site of fusion between the mRNA body and leader.

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1  TGGCGTCCGTACGTACCCTCTACTCTAAACTCTTGTAAGTTAAATCTAATCTAATCC  60
61  AAACATTATGAGTAGTACCACTCAGGCCCCAGGGCCCGTCTACCAATGGACAGCCGACGA  120
    M S S T T Q A P G P V Y Q W T A D E
    ∇ ∇ ∇ T ∇
121  GGCCGTTCAATTCCTTAAGGAATGGAACCTCTCGTTGGCCATTATACTACTCTTTATTAC  180
    A V Q F L K E W N F S L G I I L L F I T
    A
181  TATCATACTACAGTTCGGTTACACGAGCCGTAGCATGTTTATCTATGTTGTGAAAATGAT  240
    I I L Q F G Y T S R S M F I Y V V K M I
    T
241  AATCTGTGGTTAATGTGGCCACTGATTATGTTTGTGTATGTTCAATTCGGTGTATGC  300
    I L W L M W P L I I V L C M F N C V Y A
    C
301  GCTAATAATGTGTATCTTGGATTTCTATAGTGTCTTACTATAGTGTCCGTTGTAATGTG  360
    L N N V Y L G F S I V F T I V S V V H W
    A
361  GATTATGTAATTTGTTAATAGCATCAGGTTGTTTATCAGGACTGGTAGCTGGTGGAGCTT  420
    I M Y F V N S I R L F I R T G S W W S F
    T
421  CAACCCCGAAACAACAACCTAATGTGCATAGATATGAAAGGTACCGTGTATGTTAGACC  480
    N P E T N N L M C I D M K G T V Y V R P
    C C
481  CATTATTGAGGATTACCATACACTAACAGCCACTATTATTCGTGGCCACTTCTATATGCA  540
    I I E D Y H T L T A T I I R G H F Y H Q
    C
541  AGGTGTTAAGCTAGGCACCGTTTCTCTTGTCTGACTTGCCTGCTTATGTTACAGTAGC  600
    G V K L G T G F S L S D L P A Y V T V A
    G A
601  TAAGTTTCCACCTTTGCACCTTATAAGCGTGCATTCTTAGACAAGGTAGACGGTGTAG  660
    K V S H L C T Y K R A F L D K V D G V S
    C
661  CGGTTTGTCTGTTTATGTGAAGTCCAAGGTCGAAATTAACCGACTGCCCTCAAACAAC  720
    G F A V Y V K S K V G N Y R L P S N K P
    C
721  GAGTGGCGGACACCGTATGTTGAGAATCTAATCTAAACTTTAAGGATGCTCTTTTGT  780
    S G A D T V L L R I

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1. Armstrong, J., Niemann, H., Smeekens, S., Rottier, P. and Warren, G. (1984) *Nature*, 308, 751-752.