

Bacteriophage T4 gene 26

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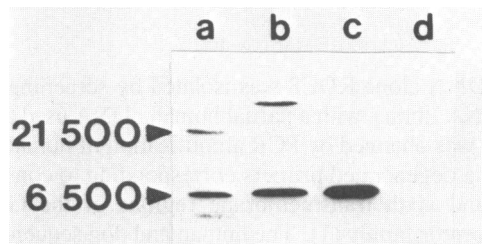
Gene product 26, a structural component of the central hub of the phage baseplate, was determined as a protein with a molecular mass of 41 kDa (1). A clone, expressing gene 26, and complementing a gene 26 mutation produces a 24-kDa protein (2). Although gene 26 is a late gene, it is expressed in the counterclockwise direction (2, 3, 4). The coding region of gene 26 is preceded by a late promoter, P_L26. A divergent late promoter, P_L51, partially overlapping P_L26, directs transcription for gene 51 in the opposite, i.e. clockwise direction. The sequence of gene 26 predicts a 208 amino acids residue peptide of Mr = 23.9 kDa, pI = 6.06. The over-expression of gene 26 (Fig. 1) in the T7 RNA-polymerase-based system of Tabor and Richardson (5) together with sequence analysis establish that gene 26 specifies two in-frame overlapping peptides of 24 and 8–9 kDa, respectively.

ACKNOWLEDGEMENT

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REFERENCES

1. Kozloff, L.M. and Lute, M. (1984) *J. Virol.* **52**, 344–349.
2. Klaus, V.J. and Nivinskas, R.H. (1990) *Genetika* **26**, in press.
3. Klaus, V.J. and Nivinskas, R.H. (1988) *Genetika* **24**, 42–52.
4. Gruidl, M.E., Canan, N.C. and Mosig, G. (1988) *Nucl. Acids Res.* **16**, 9862.
5. Tabor, S. and Richardson, C.C. (1985) *Proc. Natl. Acad. Sci. USA* **82**, 1074–1078.



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AsuII
TTCGAACTAACAAAAATCTCGATAATGCTCTACCGTAAATGGTTTAAAAAGGATGAACACCATCGGTAAT* 72
TACAACGAATAATGTTTGGCGATAGATGGTCCTTTTATTCATTATATAAATATGATAAAATAAAGGAGCTAAAT* 144
                                     PL26→ SD
GENE 51 SD ←PL51
GENE 26 210
1 ATGTATGAATACAAATTTGATGTGAGAGTTGGTCTAAAAATAATCAATTTGTCGGGCATTCACGGCT*
  M Y B Y K F D V R V G S K I I N C R A P T L
  XbaI
23 AAAGAATATCTAGAACTTATTACTGCGCAAAAAATAATGGTTCGTAGAACTAATGTTAAAAAGCT*
  K E Y L B L I T A K N N G S V E V I V K K L
  276
45 ATCAAAGACTGCACAAATGCAAAAAGATTTAAACCGCCAAAGATCAGAACTATTGTTGATTCATTT*
  I K D C T N A K D L N R Q E S E L L L I H L
  342
67 TGGGCACATTCTCGGGTAAAGTTAATCAGAAAAGTCTGGAAGTGCACCTGTGGAAGTGAAT*
  W A H S L G E V N H E N S W K C T C G T E I
  474
89 CCAAGCCATATAAATCTATTACATACACAAATAGATGCACGAGAAAGCCTCTGGTATACACTAGGT*
  P T H I N L L H T Q I D A P E D L W Y T L G
  540
111 GACATTAATAATAATTCGGATACCCATAAATTTTGTGATGATAAATAATAGCCACATGATAGT*
  D I K I K F R Y P K I P D D K N I A H M I V
  606
133 TCATGTATAGAAAAGGATTCATGCTAAGCGGGAAAGCATCCAGTTGAAGACTTAAATGAAAAGGA*
  S C I E T I H A N G E S I P V E D L N E K E
  672
155 CTAGAAGATTTATATCTATCATCAGAGTCAGATATTGTAGCTATAAAGATATGCTTTTAAAG*
  L E D L Y S I I T E S D I V A I K D M L L K
  738
177 CCTACGGTTTATTTGGCTGTTCCAATTAAGTGTCCAGAGTGTGAAAAACCCATGCTCAGTAAT*
  P T V Y L A V P I K C P E C G K T H A H V I
  HindIII
199 AGAGGCCCAAGAGTTCTTTGAGTTACTATAATGGCAAAATATTAATAGCTT
  R G L K B F F B L L *** M A N I N K L
    
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Figure 1. Over-expression of gene products 26. Autoradiograph of a 10–17.5% SDS-PAGE. Lanes: a) molecular mass markers as indicated. b) 24-kDa and 8–9-kDa peptides expressed from AsuII-HindIII fragment in plasmid pT7–5. c) the 8–9kDa peptide expressed from XbaI-HindIII fragment in plasmid pT7–5. d) control, pT7–5 without T4 DNA insert.