

NT : 209

TEM-1 ATGAGTATTCAACATTTTCGTGTCGCCCTTATTCCCTTTTTTGCGGCATTTTGCCTTCCTGTTTTTGTCTACCCAGAAACGCTGGTGAAAGTAAAAGATG

TEM-63 ATGAGTATTCAACATTTTCGTGTCGCCCTTATTCCCTTTTTTGCGGCATTTTGCCTTCCTGTTTTTGTCTACCCAGAAACGCTGGTGAAAGTAAAAGATG

TEM-131 ATGAGTATTCAACATTTTCGTGTCGCCCTTATTCCCTTTTTTGCGGCATTTTGCCTTCCTGTTTTTGTCTACCCAGAAACGCTGGTGAAAGTAAAAGATG

AA: M S I Q H F R V A L I P F F A A F C L P V F A H P E T L V K V K D
3

309 CTGAAGATCAGTTGGGTGCACGAGTGGGTTACATCGAACTGGATCTCAACAGCGGTAAAGATCCTTGAGAGTTTTCGCCCCGAAGAACGTTTTCCAATGAT
CTGAAGATCAGTTGGGTGCACGAGTGGGTTACATCGAAGCTGGATCTCAACAGCGGTAAAGATCCTTGAGAGTTTTCGCCCCGAAGAACGTTTTCCAATGAT
CTGAAGATCAGTTGGGTGCACGAGTGGGTTACATCGAAGCTGGATCTCAACAGCGGTAAAGATCCTTGAGAGTTTTCGCCCCGAAGAACGTTTTCCAATGAT
A E D Q L G A R V G Y I E L D L N S G K I L E S F R P E E R F P M
36

409 GAGCACTTTTAAAGTTCTGCTATGTGGTGCGGTATTATCCCGTGTTGACGCCGGGCAAGAGCAACTCGGTCGCCGCATACACTATTCTCAGAATGACTTG
GAGCACTTTTAAAGTTCTGCTATGTGGTGCGGTATTATCCCGTGTTGACGCCGGGCAAGAGCAACTCGGTCGCCGCATACACTATTCTCAGAATGACTTG
GAGCACTTTTAAAGTTCTGCTATGTGGTGCGGTATTATCCCGTGTTGACGCCGGGCAAGAGCAACTCGGTCGCCGCATACACTATTCTCAGAATGACTTG
M S T F K V L L C G A V L S R V D A G Q E Q L G R R I H Y S Q N D L
69

509 GTTGAGTACTCACCAGTCACAGAAAAGCATCTTACGGATGGCATGACAGTAAGAGAATTATGCAGTGCTGCCATAACCATGAGTGATAAACTGCTGCCA
GTTAAGTACTCACCAGTCACAGAAAAGCATCTTACGGATGGCATGACAGTAAGAGAATTATGCAGTGCTGCCATAACCATGAGTGATAAACTGCTGCCA
GTTAAGTACTCACCAGTCACAGAAAAGCATCTTACGGATGGCATGACAGTAAGAGAATTATGCAGTGCTGCCATAACCATGAGTGATAAACTGCTGCCA
V E Y S P V T E K H L T D G M T V R E L C S A A I T M S D N T A A
103 K K A A

609 ACTTACTTCTGACAACGATCGGAGGACCGAAGGAGCTAACCGCTTTTTTGCACAACATGGGGGATCATGTAACCTCGCCTTGATCGTTGGGAACCGGAGCT
ACTTACTTCTGACAACGATCGGAGGACCGAAGGAGCTAACCGCTTTTTTGCACAACATGGGGGATCATGTAACCTCGCCTTGATAGTTGGGAACCGGAGCT
ACTTACTTCTGACAACGATCGGAGGACCGAAGGAGCTAACCGCTTTTTTGCACAACATGGGGGATCATGTAACCTCGCCTTGATAGTTGGGAACCGGAGCT
N L L L T T I G G P K E L T A F L H N M G D H V T R L D R W E P E
136 T S



Figure 4.4 Partial nucleotide and amino acid sequences of TEM-1, TEM-63 and TEM-131 depicting the point mutations at amino acid positions 21, 104, 164, 182 and 237.

Nucleotide mutations are underlined in red and the resulting amino acid change underlined in blue.

The red arrow indicates the new mutation in TEM-131.

^a Nucleotide numbering (NT) according to AGT codon start of previously reported TEM sequences.

^b Amino acid (AA) residues are numbered according to the numbering system of Ambler *et al.*, (1981).

The one-letter amino acid code is used as follows: A, alanine; C, cysteine; D, aspartic acid; E, glutamic acid; F, phenylalanine; G, glycine; H, histidine; I, isoleucine; K, lysine; L, leucine; M, methionine; N, asparagine; P, proline; Q, glutamine; R, arginine; S, serine; T, threonine; V, valine; W, tryptophan.