

<b>Title</b>	Structure and assembly of TP901-1 virion unveiled by mutagenesis
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Oligonucleotide name	Oligonucleotide sequence (5' → 3')
<b>Recombineering primers<sup>w</sup></b>	
NZ9000-Cro <sub>712</sub> ::BamHI	C*T*C*C*A*TGATTGTTTCGCTTGTTGACTTTATGAGTTA <u>GGATCCTG</u> ATCGTCGTTGCAACTTGTCAACCATTAAGGTTGTTTT
Portal <sub>TP901-1</sub> ::Ter	T*T*T*T*T*GTCCTCGTCAACACCATATCTCACGGCAAAT <u>AGAATTC</u> AAGGCTCTTGTTGACTGTATCGTCATAGACCATAAAA
MCP1 <sub>TP901-1</sub> ::Ter	T*C*A*A*C*TAAACTGTTATATCCTTCCTTTGGAACGCTTAT <u>GAATTC</u> AACCAAGAATTCGGCTTGCTTTCAAATTCGTGAG
MCP2 <sub>TP901-1</sub> ::Ter	G*C*T*A*T*AATTTCTTCAACAACATTTCTATCACCGTCAAT <u>GAATTC</u> AATAGTAATGATAGAATTTATTTCTTTTTAAAGATGA
Sfp <sub>TP901-1</sub> ::Ter	T*T*A*G*C*T*TTTTGAAGTTCGGCAGCTTTTTCTCGTCAG <u>GAATTC</u> ATTTTTCTTTAACTGACTTTTTGCCACCTTTTTCAAG
MHP <sub>TP901-1</sub> ::Ter	C*C*C*C*G*TCAACGTTTGTCTTTAGTAGAAACAGTTTGAG <u>CGAATTC</u> AGGTAAGTCTTAGCTGCGCTCAATAAGTCGTCATCGA
MCP3 <sub>TP901-1</sub> ::Ter	T*A*G*T*T*TCAAGAAGCTCTTTAGCTGATTAACGGTAAGCGT <u>GAATTC</u> ACGTTAGTTCATCATTTTTACCTTGCTTGGTTCGATTTATG
HTC1 <sub>TP901-1</sub> ::Ter	A*C*A*T*A*TTCTAGTTCGTGGCGTACTTCTTTAATGTCAAG <u>GAATTC</u> AACCAAGAATAAGCAATAAACGGTCAAGAGTGCCTTT
HTC2 <sub>TP901-1</sub> ::Ter	T*C*A*T*T*CGCATGACTTTTGCCCTTTTTAATATCTCCAAA <u>GAATTC</u> AACTTCTACACTTCTGTCAAGTTCGAATATCAGTGATATTT
Tap <sub>TP901-1</sub> ::Ter	G*T*T*C*A*ACACCTTTAAAGATGCTGCTTTATCC <u>GAATTC</u> AAATGCTTTACAAGTTGGTCAATCCCTTTAAAGATAAGCTA
Ttp <sub>TP901-1</sub> ::Ter	T*C*A*T*T*GGCTTATAATCATAAACGGTATACCCAAAGCT <u>CATC</u> ATCGTTTGAACAATTCGTCAAAAATAGATTGGTCTCGAG
MTP <sub>TP901-1</sub> ::Ter	A*C*T*T*G*CTTTTCTGCTTTATCAATTTCCACACTTCA <u>TGAATTC</u> CATAATTGCTGCATCATCAAACGCTTTGTCCATTTTCGT
gpT <sub>TP901-1</sub> ::Ter	G*T*T*T*C*TGTTTCGATTTTCTAAAAATAATACATTCGAT <u>AGAATTC</u> AAGTTGCAATGTTAGCCATTTCTAGTTCAGGAATGAT
gpT <sub>TP901-1</sub> ::BamHI	T*C*A*G*C*TATTTGGTCATTTTGGCTTTGATTAACCTTTCC <u>GGATCC</u> CGTATTGCTTTCAGTAATTTCTTTCAAAACATCATCA
gpGf <sub>5</sub> T <sub>TP901-1</sub>	C*A*A*A*C*TTTTTCAGCTATTTGGTCAATTTTGGCTTTGAT <u>CAGCTTT</u> ACAGTATTGCTTTCAGTAATTTCTTTCAAAACATCATCA
<b>Screening primers<sup>x</sup></b>	
Cro- <i>l</i> 712-Fw	CTTCAAGATATTCATCGCTCAGACGG
Cro- <i>l</i> 712-MidFw	TTGCAACGACGATCAGGATCC
Cro- <i>l</i> 712-Rv	TCGTAATCATCAAGCGCATGTTCC
Scrnseq-Portal-Fw	GCAATGACAACCTTATCAGCGTGA
Scrn-Portal -MidRv	CACCATATCTCACGGCAAATAGAATTC
Seq-Portal -Rv	ACTGGTAAATCTGGATATGGGTTG
Scrnseq-MCP1-Fw	GAGAAAGCTTGGCAAGAGCA
Scrn-MCP1-MidRv	CTTCCTTTGGAACGCTTATGAATTC
Seq-MCP1-Rv	ATGCATGTTTGGTGCATTAATACCA
Scrnseq-MCP2-Fw	CATTCAGTTTTAGGTTATGGGAACAT
Scrn-MCP2-MidRv	AACATTTCTATCACCGTCAATGAATTC
Seq-MCP2-Rv	TTCAGCCTGCTCTTACCAA
Scrnseq-Sfp-Fw	GACGTGAAGAGAATCATTGTACCAGA
Scrn-Sfp-MidRv	GCAGCTTTTTCTTCGTCAGGAATTC
Seq-Sfp-Rv	TTCATCAGCTTGACTGGTAATGT
Scrnseq-MHP-Fw	GAATTGGTAAAGAGCAGGCTGA
Scrn-MHP-MidFw	GCTTTAGTAGAAACAGTTTGGGAATTCG
Seq-MHP-Rv	GGCTTGTGCATCCTCATCAT
Scrnseq-MCP3-Fw	ACTGTTTCTACTAAAGCAAACGTTG
Scrn-MCP3-MidRv	TGATTAACGGTAAGCGTGAATTC

Seq-MCP3-Rv	AACAGTTCTGGTAGGCTCCTT
Scrnseq-HTC1-Fw	ACGGAACTTACGCTGATGT
Scrn-HTC1-MidRv	CGGTACTTCTTTAATGTCAGGAATTC
Seq-HTC1-Rv	CTTCTTGTGAGTAGGACTGCAT
Scrnseq-HTC2-Fw	TTGCTTATGGCTATCACTGATGA
Scrn-HTC2-MidRv	CCCTTTTTTAATATCTCCAAA <u>GAAATTC</u>
Seq-HTC2-Rv	GGATTCGTTTGAACAATTCGTCA
Scrnseq-Tap-Fw	GTAATCGAAAAACGCACTCGTG
Scrn-Tap-MidRv	CTTTAAAGATGCTGCTTTATCCAGAAATTC
Seq-Tap-Rv	ACAAAAGGTTGAGCAGATTGA
Scrnseq-Ttp-Fw	TGATTTAGGCGAATGGGTTGA
Scrn-Ttp-MidRv	GGTATACCCCAAAGCTCATCA
Seq-Ttp-Rv	TGTATTTGTTGTTGTATCGTCCA
Scrnseq-MTP-Fw	CACCTCAAATATGACAGCGAATATGCAG
Scrn-MTP-MidFw	TTGATGATGCAGCAATTATGAATTC
Seq-MTP-Rv	CAATGTTAGCCATTTCTAGTTCAGGA
Scrnseq-gpG-Fw	GGAAACTTGCATTCCAAACAGA
Scrn-gpG-MidRv	CGATTTCCATAAAAAATAATACATTCGATAGAATTC
Seq-gpG-Rv	TTCGCATTCAATAAAAATCATCAA
Scrnseq-gpT-Fw	TCTCTTATGAACCTAACTCAGAAGATGCG
Scrn-gpT-MidRv	CATTTTTGCTTTGATTAACCTTCCGGATCC
Seq-gpT-Rv	AAGTTTTGAACTTGTTTAGCAGCGTC
Scrnseq-gpGfsT-Fw	ACTTGCTGTTAAAATCATTCTGAACT
Scrn-gpGfsT-MidRv	ACTGAAAGCAATAC <u>TGGTAAAGCTG</u>
Seq-gpGfsT-Rv	TTCTCTGGGCTTTCGATTCTTA

**Recombinant protein primers<sup>1, #</sup>**

pNZ-PortalTuc-Fw	AGCAGCC <u>CCATGGT</u> GAAATTTGAAACCAATAAA
pNZ-PotalTuc-Rv	AGCAGC <u>ACTAGT</u> TTAATGGTGATGGTGATGGTGCCCTCATTTGTTTCATTCTC
pNZ-MCP1Tuc-Fw	AGCAGCC <u>CCATGG</u> ATTCATCTGATTACTGGAG
pNZ-MCP1Tuc-Rv	AGCAGC <u>ACTAGT</u> TTAGTGATGGTGATGGTGATGCCTTTTCTTTTATTGC
pTX-MCP2Tuc-Fw	AGCAGC <u>GGATCC</u> ATGGCTAAAGATGATTCTT
pTX-MCP2Tuc-Rv	AGCAGC <u>ACTAGT</u> TTAGTGATGGTGATGGTGATGAGTTCCTGGTATCCAGTCTTTT
pNZ-SfpTuc-Fw	AGCAGC <u>CCATGGA</u> ACAAACAGAACTTTT
pNZ-SfpTuc-Rv	AGCAGC <u>ACTAGT</u> TTAGTGATGGTGATGGTGATGATAGCCTCCTGTAAATTTT
pTX-MHPTuc-Fw	AGCAGC <u>CCATGG</u> CAAAAACAAAAACAACACTTAC
pTX-MHPTuc-Rv	AGCAGC <u>ACTAGT</u> TTAGTGATGGTGATGGTGATGTACACCCGTAAATGTGATATTA
pTX-MCP3Tuc-Fw	AGCAGC <u>GGATCC</u> ATGGGGCGGCTACTAAGTCG
pTX-MCP3Tuc-Rv	AGCAGC <u>ACTAGT</u> TTAGTGATGGTGATGGTGATGTAAGTGATGCCATAAGCAA

pTX-HTC1Tuc-Fw	AGCAGC <u>GGATCC</u> ATGGCTATCACTTATGAAAT
pTX-HTC1Tuc-Rv	AGCAGC <u>ACTAGT</u> TTAGTGATGGTGATGGTGATGATACAATCTGAACCTCCCTATCTTC
pTX-TapTuc-Fw	AGCAGC <u>GGATCC</u> ATGAAAATAACTGGAATTGA
pTX-TapTuc-Rv	AGCAGC <u>ACTAGT</u> TTAGTGATGGTGATGGTGATGTTTCGTCAACCTTTCTAA

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- \* Phosphorothioate linkages of recombineering oligos.
- ψ Nucleotides of recombineering oligos which are designed to introduce or alter the base sequence of TP901-1erm are underlined once, while introduced restriction enzyme sites are double underlined.
- ¥ Nucleotides of screening oligos which bind to mutated bases are underlined.
- ‡ Restriction enzymes sites of recombinant protein construct oligos are double underlined.
- # Hexahistidine tags are indicated in bold.