

**Supplementary Table 1.** The primers used in this study.

Primer name	Sequence(5'-3')	Use
CMVF	GCCACTAGTTAGTTATTAATAGTAATCAATT	Replace the T7 promoter with the CMV promoter by overlap extension PCR
NgoR	AAGTTGAAGGCTGCATTGCGAGCA	
CMV23R	CCGGACTCTTTTGGAAGTTCACTAAACCAGCT	
Ngo23F	AGCTGGTTTAGTGAACCTCCAAAAGAGTCCGG	
F3F	AGCTCGAGGCATGCATTCTCA	Introduction of the ribozyme elements at the 3' end of the virus genome
P1	GGAGGTGGAGATGCCATGCCGACCCTTTTTTTTTTTTTTTT	
P2	TTTTTTTTTTTTTTTTTTTTTTTTTGCTTCTAATT	
P2	GAGTGGACGTGCGTCCTCCTTCGGATGCCCAGGTCGGA	
P3	CCGCGAGGAGGTGGAGATGCCATGCCGACCC	
	CCGCGGGCGCCCTCCCTTAGCCATCCGAGTGGACGTGC	
	GTCCTCCTTC	
ORF1a-1606-F	TTGTTAACGACGACATTGTGGTCTCAAC	Construction of transposon plasmid
ORF1a-2575-R	CTAAGCTTCTGAATCTTACTCCCAAG	
CC-His-F	CCAATCTTACAACCTAATcatcatcaccatcaccatGAGATTGT	Introduction of epitope tags in the CC domain
	TGAACTCATTC	
CC-His-R	GAATGAGTTCAACAATCTCatggtgatggtgatgatgATTAGGG	
	TTGTAAGATTGG	
CC-Flag-F	CCAATCTTACAACCTAATgattacaaggatgacgacgataagGAG	
	ATTGTTGAACTCATTC	
CC-Flag-R	GAATGAGTTCAACAATCTCcttatcgctcatccttgaatcATTAG	Introduction of epitope tags in the VPg domain
	GGTTGTAAGATTGG	
CC-HA-F	CCAATCTTACAACCTAATtaccatacagcgtcccagactacgctGA	
	GATTGTTGAACTCATTC	
CC-HA-R	GAATGAGTTCAACAATCTCagcgtagtctgggacgtcgatgggtaA	
	TTAGGGTTGTAAGATTGG	
VPg-A-His-F	CAAGACCAAGCGTGGGcatcatcaccatcaccatCGCACTGGGC	Introduction of epitope tags in the VPg domain
	AGCGGACCAATC	
VPg-A-His-R	GATTGGTCCGCTGCCAGTGCGatggtgatggtgatgatgCCCA	
	CGCTTGGTCTTG	
VPg-A-Flag-F	CAAGACCAAGCGTGGGgattacaaggatgacgacgataagCGCAC	
	TGGGCAGCGGACC	
VPg-A-Flag-R	GGTCCGCTGCCAGTGCGcttatcgctcatccttgaatcCCCACG	
	CTTGGTCTTG	
VPg-A-HA-F	CAAGACCAAGCGTGGGtaccatacagcgtcccagactacgctCGCA	
	CTGGGCAGCGGACCAATC	
VPg-A-HA-R	GATTGGTCCGCTGCCAGTGCGagcgtagtctgggacgtcgatgg	
	gtaCCCACGCTTGGTCTTG	
VPg-B-His-F	GTGGGCGCACTGGGCAGCGGACTcatcatcaccatcaccatCGG	
	ACCAATCTCCGGAAAGGAGCTCG	
VPg-B-His-R	CGAGCTCCTTTCCGGAGATTGGTCCGatggtgatggtgatgatg	

	AGTCCGCTGCCCAGTGCGCCAC	
VPg-B-Flag-F	GTGGGCGCACTGGGCAGCGACTgattacaaggatgacgacgata agCGGACCAATCTCCGGAAAGGAGCTCG	
VPg-B-Flag-R	CGAGCTCCTTTCCGGAGATTGGTCCGcttatcgtcgtcatccttgta atcAGTCCGCTGCCCAGTGCGCCAC	
VPg-B-HA-F	GTGGGCGCACTGGGCAGCGACTtaccatacagcgtcccagacta cgctCGGACCAATCTCCGGAAAGGAGCTCG	
VPg-B-HA-R	CGAGCTCCTTTCCGGAGATTGGTCCGagcgtagtctgggacgtc gtatgggtaAGTCCGCTGCCCAGTGCGCCAC	
VPg-C-His-F	CTACGAGTACGAACGCAATcatcatcaccatcaccatGAGGAGG TGGATTACGAC	
VPg-C-His-R	GTCGTAATCCACCTCCTCatggtgatggtgatgatgATTGCGTTC GTACTCGTAG	
VPg-C-Flag-F	CTACGAGTACGAACGCAATgattacaaggatgacgacgataagGA GGAGGTGGATTACGAC	
VPg-C-Flag-R	GTCGTAATCCACCTCCTCcttatcgtcgtcatccttgtaatcATTGCG TTCGTAATCGTAG	
VPg-C-HA-F	CTACGAGTACGAACGCAATtaccatacagcgtcccagactacgtG AGGAGGTGGATTACGAC	
VPg-C-HA-R	GTCGTAATCCACCTCCTCagcgtagtctgggacgtcgtatgggtaATT GCGTTCGTAATCGTAG	
HVR-His-F	GTCAAAGCCCAGAAGCCCATTcatcatcaccatcaccatCCCAT CCCTGCACCGCGCTCCCGGAAAG	
HVR-His-R	CTTTCCGGGAGCGCGGTGCAGGGATGGGatggtgatggtgat gatgAATGGGCTTCTGGGCTTTGAC	
HVR-Flag-F	GTCAAAGCCCAGAAGCCCATTgattacaaggatgacgacgataag CCCATCCCTGCACCGCGCTCCCGGAAAG	Introduction of epitope tags
HVR-Flag-R	CTTTCCGGGAGCGCGGTGCAGGGATGGGcttatcgtcgtcatcc ttgtaatcAATGGGCTTCTGGGCTTTGAC	in the HVR domain
HVR-HA-F	GTCAAAGCCCAGAAGCCCATTtaccatacagcgtcccagactacgc tCCCATCCCTGCACCGCGCTCCCGGAAAG	
HVR-HA-R	CTTTCCGGGAGCGCGGTGCAGGGATGGGagcgtagtctggga cgtcgtatgggtaAATGGGCTTCTGGGCTTTGAC	
HVR-AflIII-F	GTCAAAGCCCAGAAGCCCATTCTTAAGGCCGTCGACCC CATCCCTGCACCGCGCTCCCGGAAAG	Introduction of restriction sites in the HVR domain
HVR-SalI-R	CTTTCCGGGAGCGCGGTGCAGGGATGGGGTTCGACGGCC TTAAGAATGGGCTTCTGGGCTTTGAC	
iLOV-AflIII-F	GCCTTAAGATGATAGAGAAGAATTCGTC	Amplification of iLOV
iLOV-SalI-R	GCGTCGACTACATGATCACTTCATCGAGC	sequence

<sup>1</sup> Epitope tags are shown as lower case letters.

<sup>2</sup> Restriction sites are shown as italics.