

Table S2. Primers used for the construction of recombinant viruses.

Construct element	Primer*	Primer sequence (5'→3')	Purpose
LbCas12a	D2521 (F)	attggtgtactcgcaaggggagaagATGAGC AAGCTGGAGAAG	Amplification of <i>LbCas12a</i> for TEVΔN Ib ::LbCas12a
	D2508 (R)	tctgaaaataaagattctcagtcgtGGCATAG TCGGGGACATC	
crFT	D3591 (F)	gaggtcagcaccagctagcaTAATTTCTA CTAAGTGTAGATCAAGATCTAT TGGCCTAAG	Amplification of crFT for PVX::crFT
	D3592 (R)	gggaaacttaacaaaccctaATCTACACT TAGTAGAAATTAAACTCTTAGG CCAATAGAT	
	D3712 (F)	tttcagtaaTAATTTCTACTAAGTGT AGATCAAGATCTATTGGCCTAA G	Amplification of crFT for PVX::N Ib :crFT
	D3713 (R)	gggaaacttaacaaaccctaATCTACACT TAGTAGAAATTAAACTCTTAGG CCAATAGAT	
pBPVX::crFT	D4036 (F)	TAATTTCTACTAAGTGTAGATC AAGATCTATTGG	Amplification of pBPVX::crFT for PVX::crXT1:crTFL1:crFT
	D3536 (R)	TGCTAGCTGGTGCTGACC	
crXT1	D4037 (F)	gaggtcagcaccagctagcaTAATTTCTA CTAAGTGTAGATTATGTAGGTG TATTGG	Amplification of crXT1 for PVX::crXT1:crFT
	D4038 (R)	ATCTACACTTAGTAGAAATTA GAATTCCAAATACACC	Amplification of crTFL1 3.1/14.1 for PVX::crXT1:crFT
N Ib	D3710 (F)	gaggtcagcaccagctagcaTGGGGGAG AAGAGGAAATG	Amplification of TEV N Ib cistron for PVX::N Ib :crFT
	D3711 (R)	gtagaaattaTACTGAAAATAAAG ATTCTCAGTCG	

*F, forward primer; R, reverse primer