

Table S1. Primers used in this study.

Primer	Sequence 5' > 3'
PSCYV-detection-F	CCAATGTTCAACTAGGTGGG
PSCYV-detection-R	ACTCTCTGCCGCTAATGTAT
PSCYV-5RACEGSP1-R	GTTGGCTGGAACACATCGAGGTGGCCA
PSCYV-5RACEGSP2-R	GGGATGCTTCGTCGGGCTTTGGTGAAGC
PSCYV-3RACEGSP1-F	ACTGAAACCCCAAGCCGGAGGAACTGTT
PSCYV-3RACEGSP2-F	TCTTGCTGGTGTGGACTACCAGTGACCC
PSCYV-F	CGGGTATCGAAACCCGATT
PSCYV-R	CGGGCGCGGTTGCAGTGATA
PSCYV-P1-2-F1	ATGGCGAGCGTTCTTGCCA
PSCYV-P1-2-R1	TCAAAAAATCCTTGCCCCGCCCCAA
PSCYV-P1-2-F2	CCAAGGATTTTGTATTGGGGACGTCGT
PSCYV-P1-2-R2	CTAGCACACACGCCACAAC
PSCYV-P1-GFP-F	GAGCTCGGTACCCGGGGATCCATGGCGAGCGTTCTTGCCAA
PSCYV-P1-GFP-R	CATGTCGACTCTAGAGGATCCAAAATCCTTGCCCCGGCCC
PSCYV-P2-GFP-F	GAGCTCGGTACCCGGGGATCCATGTTGTACAAGATGCTGGG
PSCYV-P2-GFP-R	CATGTCGACTCTAGAGGATCCGCACACACGCCACAACCTCGC
PSCYV-P3-GFP-F	GAGCTCGGTACCCGGGGATCCATGGCCAGCGTTATCAATGT
PSCYV-P3-GFP-R	CATGTCGACTCTAGAGGATCCCCATTGTTGGCAGTAATGC
PSCYV-P4-GFP-F	GAGCTCGGTACCCGGGGATCCATGTCTACCACACTCTCCAG
PSCYV-P4-GFP-R	CATGTCGACTCTAGAGGATCCGTAGCGTGGTCGTGATGGAC
PSCYV-P1-2-GFP-F	GAGCTCGGTACCCGGGGATCCATGGCGAGCGTTCTTGCCAA
PSCYV-P1-2-GFP-R	CATGTCGACTCTAGAGGATCCGCACACACGCCACAACCTCGC
PSCYV-P1-Flag-F	GAGCTCGGTACCCGGGGATCCATGGCGAGCGTTCTTGCCA
PSCYV-P1-Flag-R	GTCGTCGACTCTAGAGGATCCAAAATCCTTGCCCCGGCC
PSCYV-P2-Flag-F	GAGCTCGGTACCCGGGGATCCATGTTGTACAAGATGCTGGG
PSCYV-P2-Flag-R	GTCGTCGACTCTAGAGGATCCGCACACACGCCACAACCTCG
PSCYV-P3-Flag -F	GAGCTCGGTACCCGGGGATCCATGGCCAGCGTTATCAATGT
PSCYV-P3-Flag-R	GTCGTCGACTCTAGAGGATCCCCATTGTTGGCAGTAATGC
PSCYV-P4-Flag -F	GAGCTCGGTACCCGGGGATCCATGTCTACCACACTCTCCAG
PSCYV-P4-Flag-R	GTCGTCGACTCTAGAGGATCCGTAGCGTGGTCGTGATGGAC
PSCYV-P1-2-Flag-F	GAGCTCGGTACCCGGGGATCCATGGCGAGCGTTCTTGCCA
PSCYV-P1-2-Flag-R	GTCGTCGACTCTAGAGGATCCGCACACACGCCACAACCTCG
PSCYV-PVX-P1-F	TCAGCACCAGCTAGCATCGATATGGCGAGCGTTCTTGCCA
PSCYV-PVX-P1-R	AACCGTTCATCGGCGGTCTGACTCAAAAATCCTTGCCCCGG
PSCYV-PVX-P2-F	AGCTAGCATCGATTGGCGCGCCATGTTGTACAAGATGCTGGG
PSCYV-PVX-P2-R	AACCGTTCATCGGCGGTCTGACTAGCACACACGCCACAAC
PSCYV-PVX-P3-F	AGCTAGCATCGATTGGCGCGCCATGGCCAGCGTTATCAATG
PSCYV-PVX-P3-R	AACCGTTCATCGGCGGTCTGACTCACCATTGTTGGCAGTAAT
PSCYV-PVX-P4-F	TCAGCACCAGCTAGCATCGATATGTCTACCACACTCTCCAG
PSCYV-PVX-P4-R	AACCGTTCATCGGCGGTCTGACTTAGTAGCGTGGTCGTGATG
PSCYV-PVX-P1-2-F	TCAGCACCAGCTAGCATCGATATGGCGAGCGTTCTTGCCA

PSCYV-PVX-P1-2-R	AACCGTTCATCGGCGGTGACCTAGCACACACGCCACAAC
PSCYV-pGD-P1-F	TACAAATCTATCTCTGGATCCATGGCGAGCGTTCTTGCCA
PSCYV-pGD-P1-R	GTTTGAACGAGCTCTGTGCGACTCAAAAATCCTTGGCCCCG
PSCYV-pGD-P2-F	TACAAATCTATCTCTGGATCCATGTTGTACAAGATGCTGGG
PSCYV-pGD-P2-R	GTTTGAACGAGCTCTGTGCGACTAGCACACACGCCACAAC
PSCYV-pGD-P3-F	TACAAATCTATCTCTGGATCCATGGCCAGCGTTATCAATGT
PSCYV-pGD-P3-R	GTTTGAACGAGCTCTGTGCGACTCACCATTGTTGGCAGTAATG
PSCYV-pGD-P4-F	TACAAATCTATCTCTGGATCCATGTCTACCACACTCTCCAG
PSCYV-pGD-P4-R	GTTTGAACGAGCTCTGTGCGACTTAGTAGCGTGGTCGTGATG
PSCYV-pGD-P1-2-F	TACAAATCTATCTCTGGATCCATGGCGAGCGTTCTTGCCAA
PSCYV-pGD-P1-2-R	GTTTGAACGAGCTCTGTGCGACTAGCACACACGCCACAAC
pCB301-PSCYV-F	AGTTCATTTTCAATTGGAGAGGCGGGTATCGAAACCCCGATT
pCB301-PSCYV-R	GTGGAGATGCCATGCCGACCCGGGCGCGGTTGCAGTGATAA

Table S2. Viruses of the genus *Umbravirus* used for the nucleotide and amino acid identity analyses.

Virus name	Nucleotide identities			Amino acids identities		
	Genome	P1	P2	RdRp	P3	P4
Carrot mottle mimic virus	NC_001726.1	NP_054006.3	None	NP_054007.4	NP_054008.1	NP_054009.1
Carrot mottle virus	NC_011515.1	YP_009336474.1	None	YP_002302259.2	YP_002302260.1	YP_002302261.1
Ethiopian tobacco bushy top virus	NC_024808.1	YP_009336475.1	None	YP_009056849.1	YP_009056850.1	YP_009056851.1
Groundnut rosette virus	NC_003603.1	NP_619659.1	None	YP_009162058.1	NP_619660.1	NP_619661.1
Ixeridium yellow mottle virus 2	NC_034243.1	YP_009352230.1	None	YP_009352229.1	YP_009352231.1	YP_009352232.1
Opium poppy mosaic virus	NC_027710.2	YP_009164949.1	None	YP_009162614.2	YP_009162615.1	YP_009162616.1
Patrinia mild mottle virus	NC_055564.1	YP_010087618.1	None	YP_010087617.1	YP_010087619.1	YP_010087620.1
Pea enation mosaic virus 2	NC_003853.1	NP_620845.1	None	NP_620846.3	NP_620847.1	NP_620848.1
Tobacco bushy top virus	NC_004366.1	NP_733847.1	None	NP_733848.2	NP_733849.1	NP_733850.1
Tobacco mottle virus	NC_043206.1	None	None	YP_009665185.1	YP_009665186.1	YP_009665187.1

Table S3. Viruses used for phylogenetic analysis.

Virus name	RdRp Accession number	Genus
Carrot mottle mimic virus	NP_054007.4	<i>Umbravirus</i>
Carrot mottle virus	YP_002302259.2	<i>Umbravirus</i>
Ethiopian tobacco bushy top virus	YP_009056849.1	<i>Umbravirus</i>
Groundnut rosette virus	YP_009162058.1	<i>Umbravirus</i>
Ixeridium yellow mottle virus 2	YP_009352229.1	<i>Umbravirus</i>
Opium poppy mosaic virus	YP_009162614.2	<i>Umbravirus</i>
Patrinia mild mottle virus	YP_010087617.1	<i>Umbravirus</i>
Pea enation mosaic virus 2	NP_620846.3	<i>Umbravirus</i>
Tobacco bushy top virus	NP_733848.2	<i>Umbravirus</i>
Tobacco mottle virus	YP_009665185.1	<i>Umbravirus</i>
Angelonia flower break virus	YP_459960.2	<i>Alphacarmovirus</i>
Carnation mottle virus	YP_009032645.1	<i>Alphacarmovirus</i>
Tobacco necrosis virus A	NP_056825.2	<i>Alphanecrovirus</i>
Olive mild mosaic virus	YP_224015.1	<i>Alphanecrovirus</i>
Pothos latent virus	YP_009032634.1	<i>Aureusvirus</i>
Cucumber leaf spot virus	YP_009032639.1	<i>Aureusvirus</i>
Oat chlorotic stunt virus	NP_619751.1	<i>Avenavirus</i>
Turnip crinkle virus	NP_620720.3	<i>Betacarmovirus</i>
Cardamine chlorotic fleck virus	NP_041884.1	<i>Betacarmovirus</i>
Tobacco necrosis virus D	NP_608311.1	<i>Betanecrovirus</i>
Beet black scorch virus	NP_758810.3	<i>Betanecrovirus</i>
Galinsoga mosaic virus	NP_044732.1	<i>Gallantivirus</i>
Melon necrotic spot virus	NP_041226.1	<i>Gammacarmovirus</i>
Pea stem necrosis virus	NP_862835.2	<i>Gammacarmovirus</i>
Furcraea necrotic streak virus	YP_007517174.1	<i>Macanavirus</i>
Maize chlorotic mottle virus	NP_619718.1	<i>Machlomovirus</i>
Panicum mosaic virus	NP_068342.1	<i>Panicovirus</i>
Thin paspalum asymptomatic virus	YP_008219057.1	<i>Panicovirus</i>
Pelargonium ringspot virus	YP_009116639.1	<i>Pelarspovirus</i>
Pelargonium chlorotic ring pattern virus	YP_052925.1	<i>Pelarspovirus</i>
Cucumber necrosis virus	NP_040953.2	<i>Tombusvirus</i>
Tomato bushy stunt virus	NP_062897.1	<i>Tombusvirus</i>
Maize necrotic streak virus	YP_459920.2	<i>Zeavirus</i>
Carnation ringspot virus	NP_619711.1	<i>Dianthovirus</i>
Sweet clover necrotic mosaic virus	NP_620674.3	<i>Dianthovirus</i>
Barley yellow dwarf virus-MAV	NP_620064.1	<i>Luteovirus</i>
Barley yellow dwarf virus-PAS	NP_037635.1	<i>Luteovirus</i>
Barley yellow dwarf virus-PAV	NP_840014.2	<i>Luteovirus</i>
Pea enation mosaic virus 1	NP_620026.3	<i>Enamovirus</i>
Potato leafroll virus	NP_056748.3	<i>Polerovirus</i>

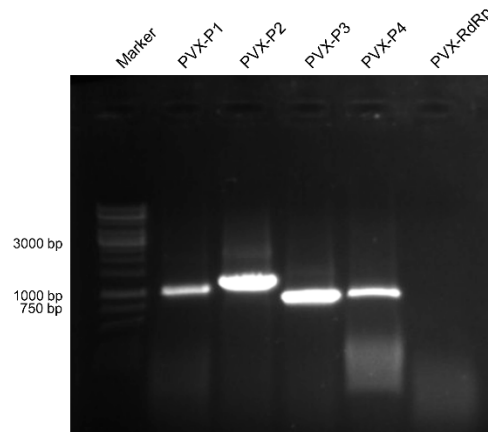


Figure S1. RT-PCR detecting PSCYV *P1*, *P2*, *P3*, *P4* and *RdRp* genes in the PVX-P1-, PVX-P2-, PVX-P3-, PVX-P4- and PVX-RdRp-infected plants at 21 dpi.