

# Figure S3

## A.

### BLAST results of tobravirus primers PCR product

PCR	Seq	1	ATAAACAAAGAGAAATGCAGAGGCAGAGCTTTTTGAAGAGTTTCAGGGATAACGCAACGA	60
L23972		642	ATAAACAAAGAGAAATGCAGAGGCAGAGCTTTTTGAAGAGTTTCAGGGATAACGCAACGA	701
PCR	Seq	61	CTTCCGACTCGGTCGTCAGTATGCGCAGTATGAGATGTATAATGCATTCAAGAATGGTG	120
L23972		702	CTTCCGACTCGGTCGTCAGTATGCGCAGTATGAGATGTATAATGCATTCAAGAATGGTG	761
PCR	Seq	121	TGGATAAACCTAATTTTGTAGGTGTAACAACACTTTCCAAGATTGCAATTGCAGGGGTT	180
L23972		762	TGGATAAACCTAATTTTGTAGGTGTAACAACACTTTCCAAGATTGCAATTGCAGGGGTT	821
PCR	Seq	181	ATACTAAAGATGGATTGCGGCGCGTGCAGAACATGCAATCGCTCTCCATAGTTTGTATG	240
L23972		822	ATACTAAAGATGGATTGCGGCGCGTGCAGAACATGCAATCGCTCTCCATAGTTTGTATG	881
PCR	Seq	241	ACTTCGAGCTCGACAGCGTGGCAGACGCTATGATCGAAAAGAAGACGAAATTCCTGCACG	300
L23972		882	ACTTCGAGCTCGACAGCGTGGCAGACGCTATGATCGAAAAGAAGACGAAATTCCTGCACG	941
PCR	Seq	301	CAGCTATGCTTTTCGCACCTGAGGCAATTATGATAGAGGAAGGTCCACTACCTGATGTTA	360
L23972		942	CAGCTATGCTTTTCGCACCTGAGGCAATTATGATAGAGGAAGGTCCACTACCTGATGTTA	1001
PCR	Seq	361	ATGGTTACTACCACAGAGTGCAAAAAGAATCTTGGAAC TAGGCCGAGAGAATTATGTTTG	420
L23972		1002	ATGGTTACTACCACAGAGTGCAAAAAGAATCTTGGAAC TAGGCCGAGAGAATTATGTTTG	1061
PCR	Seq	421	GTTTTACGACGACCCCTCCATAATTATATTCACACCTGGTCTGAGTATAAAAAATACT	480
L23972		1062	GTTTTACGACGACCCCTCCATAATTATATTCACACCTGGTCTGAGTATAAAAAATACT	1121
PCR	Seq	481	TATTAGGAAAATCTTTTGTTCGACGTGGCCATACTTTCTTCTTTGAGCCGTGGCAGAGTA	540
L23972		1122	TATTAGGAAAATCTTTTGTTCGACGTGGCCATACTTTCTTCTTTGAGCCGTGGCAGAGTA	1181
PCR	Seq	541	GAGGAGATACGATGTTCTTTACATTGTATAGGATGACTAATGTTCCAGAACTGGCTTGT	600
L23972		1182	GAGGAGATACGATGTTCTTTACATTGTATAGGATGACTAATGTTCCAGAACTGGCTTGT	1241
PCR	Seq	601	TTGGAGAAGAGTATTACAGGAGGTTGTACATTAAGAGTGGGCTGGAATGGTGATTGCGC	660
L23972		1242	TTGGAGAAGAGTATTACAGGAGGTTGTACATTAAGAGTGGGCTGGAATGGTGATTGCGC	1301
PCR	Seq	661	CGGTC TTC 668	
L23972		1302	CGGTC TTC 1309	

### BLAST results of PepRSV 29K ORF

PepRSV-29K		1	ATGGAGAACGATAAGTCGTTAGTTGCTTTGAAGAAGAAGACTTTTGAATTGTCTAACTTT	60
L23972		5415	ATGGAGAACGATAAGTCGTTAGTTGCTTTGAAGAAGAAGACTTTTGAATTGTCTAACTTT	5474
PepRSV-29K		61	AGTAGGTTGGGTTTCGGTCGAGTTGTTTCGTCGATTC AAAAAAGAAAGAGACCGAAGTACTTT	120
L23972		5475	AGTAGGTTGGGTTTCGGTCGAGTTGTTTCGTCGATTC AAAAAAGAAAGAGACCGAAGTACTTT	5534
PepRSV-29K		121	CACAGACGTAGGCAGGTTGTTTTGAATAATGTAGCAGGCTCTTAACTGAACACAAGTTA	180
L23972		5535	CACAGACGTAGGCAGGTTGTTTTGAATAATGTAGCAGGCTCTTAACTGAACACAAGTTA	5594
PepRSV-29K		181	GGTGCTTTCAAAGTAGAAGATGTTGGAAGAATCAAGAGTTATGCCTTCTTGAGGATCGTA	240
L23972		5595	GGTGCTTTCAAAGTAGAAGATGTTGGAAGAATCAAGAGTTATGCCTTCTTGAGGATCGTA	5654
PepRSV-29K		241	GCAATTCAACTTGTGTGTCTTCGCATTTACCTAGGGATACCCCTGGGCACTTGCAAGTT	300
L23972		5655	GCAATTCAACTTGTGTGTCTTCGCATTTACCTAGGGATACCCCTGGGCACTTGCAAGTT	57134
PepRSV-29K		301	GACATTTTGGATACTCGTCTTACGGATGGGAGAAAGAAAAACAAGGCTTTCAGAGGTTTC	360
L23972		5715	GACATTTTGGATACTCGTCTTACGGATGGGAGAAAGAAAAACAAGGCTTTCAGAGGTTTC	5774

PepRSV-29K	361	ATGGCCAAAGCCTGTGATAACACTTCTTTGATTTCAGTATAAGTTCGATTACTGCGTGAGT	420
L23972	5775	ATGGCCAAAGCCTGTGATAACACTTCTTTGATTTCAGTATAAGTTCGATTACTGCGTGAGT	5834
PepRSV-29K	420	ACCAGCGAAAATCTTGCGGACCTTTGGCACATTGGTACAGTGGCTACTGGAGTACCAGTT	480
L23972	5834	ACCAGCGAAAATCTTGCGGACCTTTGGCACATTGGTACAGTGGCTACTGGAGTACCAGTT	5894
PepRSV-29K	481	GTAGATGGTTGTTTCCCGTTTAGTGTAGAAATGTCTTTAATTTGGGTTGCTACTGATTTCG	540
L23972	5894	GTAGATGGTTGTTTCCCGTTTAGTGTAGAAATGTCTTTAATTTGGGTTGCTACTGATTTCG	5954
PepRSV-29K	541	ACTACTCGGTTAAATCCTGAAGAGCTGAACAGTACCGATTATTTAGAAAGGTGACTTTAGT	600
L23972	5955	ACTACTCGGTTAAATCCTGAAGAGCTGAACAGTACCGATTATTTAGAAAGGTGACTTTAGT	6014
PepRSV-29K	601	GATCAGAGTCAATTTGAAGAGTATATGAGCTTAAATCAAGTCAAAGCGAAAAGCGATTGAT	660
L23972	6015	GATCAGAGTCAATTTGAAGAGTATATGAGCTTAAATCAAGTCAAAGCGAAAAGCGATTGAT	6074
PepRSV-29K	661	GTCAAGTTCAAAGGTGAGTATGTGCCTAAACTTAGGCAGGATAGAAATTTGGCTTCGTTA	720
L23972	6075	GTCAAGTTCAAAGGTGAGTATGTGCCTAAACTTAGGCAGGATAGAAATTTGGCTTCGTTA	6134
PepRSV-29K	721	GAAAAGATTCCGCAGTCAATTTGTGAAAGCGCAAGCATAAAGAAAAAA	768
L23972	6135	GAAAAGATTCCGCAGTCAATTTGTGAAAGCGCAAGCATAAAGAAAAAA	6182

**BLAST results of PepRSV 12K ORF**

PepRSV-12K	1	ATGACGAAGTGTGCTCTACCTGAATGTGAAGAAAATACTCAGAAGAATCAGATGACCTGT	60
L23972	6182	ATGACGAAGTGTGCTCTACCTGAATGTGAAGAAAATACTCAGAAGAATCAGATGACCTGT	6241
PepRSV-12K	61	TCAATGAAACATGCTAATAAATAATAATAGGTATTTAGCTAGTAAGTTCGATGTAAAAAGA	120
L23972	6242	TCAATGAAACATGCTAATAAATAATAATAGGTATTTAGCTAGTAAGTTCGATGTAAAAAGA	6301
PepRSV-12K	121	AAATGCGAGTGCAAGAACTGTGGTTGGTTTCCCTGCGATATCAGTTCAACCTGATTACGTG	180
L23972	6302	AAATGCGAGTGCAAGAACTGTGGTTGGTTTCCCTGCGATATCAGTTCAACCTGATTACGTG	6361
PepRSV-12K	181	GAAGTCTACTTCTGTGTGGCATGAAGCATTTACAAAAGTGCAAAACCGATAATCCTTTA	240
L23972	6362	GAAGTCTACTTCTGTGTGGCATGAAGCATTTACAAAAGTGCAAAACCGATAATCCTTTA	6421
PepRSV-12K	241	AAGGAGAAACGGTTGAACACACCAAAAAGACTGTTTAGAGATGATGTAGATTTTGGTCTT	300
L23972	6422	AAGGAGAAACGGTTGAACACACCAAAAAGACTGTTTAGAGATGATGTAGATTTTGGTCTT	6481
PepRSV-12K	301	AATTTACTGTTTAGTGAGGTGTGT	324
L23972	6482	AATTTACTGTTTAGTGAGGTGTGT	6505

**B.**

Sequence alignment of tobavirus primers PCR product versus *Tobacco rattle virus* (TRV)

PCR	Seq	1	ATAAACAAAGAGAAATGCAGAGGCAGAGCTTTTGAAGAGTTTCAGGGATAACGCAACGA	60
TRV (HM195288)		622	ACGATCAGAGAGAAATTTCTCGGCAGATATTTCTAACTGCAATTGGCGATCAGCCAGGA	681
PCR	Seq	61	CT--TCCGACTCGGTCGTCACATGATGCGCAGTATGAGATGTATAATGCATTCAAGAATGG	118
TRV (HM195288)		682	GTGGTAAGAGACAGATGTCGGAGAA-CGAGCTGTG-GATGTACGATCAATTTCCGAGAGAA	739
PCR	Seq	119	TGTGGATAAACCTAATTTTGTAGGTGTAACAACACTTTCCAAGATTGCAATTGCAGGGG	178
TRV (HM195288)		740	TATTACCGCACCTAACGCTGTTAGGTGTAATAATACATATCAAGTTGTACATGTAGAGG	799
PCR	Seq	179	TTATACTAAAGATGGATTGCGCGCGGTCGAGAACATGCAATCGCTCTCCATAGTTTGT	238
TRV (HM195288)		800	ATTTTCT--GATGGTAAGAAGAAAGGTGCGCAGTATGCTATTGCTTTACATAGTTTGT	856
PCR	Seq	239	TGACTTCGAGCTCGACAGCGTGGCAGACGCTATGATCGAAAAGAAGACGAAATTCCTGCA	298
TRV (HM195288)		857	TGACTTCAAGTTGAAAGACTTGATGCTACAATGGTTGAGAAAAGACAAAAGTGGTACA	916

PCR Seq	299	CGCAGCTATGCTTTTCGCACCTGAGGCAATTATGATAGAGGAAGGTCCACTACCTGATGT	358
TRV (HM195288)	917	TGCTGCTATGCTTTTCTCCTGAGAGTATGCTAGTGGACGAGGGTCCATTACCTTCTGT	976
PCR Seq	359	TAATGGTTACTACCACAGAGTGCAAAGAATCTTGGAAC TAGGCCGAGAGAATTATGTT	418
TRV (HM195288)	977	TGATGGTTACTACA-----TGAAAAAGAAT-----GGGAAGATCTACTT	1015
PCR Seq	419	TGGTTTTTCACGACGCCCTTCTATAATTATATTTACACCTGGTCTGAGTATAAAAAATA	478
TRV (HM195288)	1016	CGGTTTCGAAAAGGATCCTTCTTTTCTTATATTCATGATTGGGAAGAGTACAAGAAATA	1075
PCR Seq	479	CTTATTAGGAAAATCTTTTGTTCGACGTGGCCATACTTCTTCTTTGAGCCGTGGCAGAG	538
TRV (HM195288)	1076	TCTACTGGGAAAGCCAGTGAGTTACCAAGGGAACGTGTTCTACTTCGAACCGTGGCAAGT	1135
PCR Seq	539	TAGAGGAGATACGATGTTCTTTACATTGTATAGGATGACTAATGTTCCAGAACTGGCTT	598
TRV (HM195288)	1136	GAGAGGAGATACAATGCTATTTTCAATCTACAGGATAGCTGGAGTTCGAGG-CGGTCTC	1194
PCR Seq	599	GTTTGG-AGAAGAGTATTACAGGAGTGTACATTTAAAGTGGGCTGGAATGGTGATTG	657
TRV (HM195288)	1193	TTTCATCACAAGAGTACTACCGAAGAATATATATCAGTAGATGGGAAAACATGGTTGTTG	1254
PCR Seq	658	CGCCGGTCTTC 668	
TRV (HM195288)	1255	TCCCGATTTTC 1265	

Sequence alignment of PepRSV 29K ORF versus Tobacco rattle virus (TRV)

PepRSV-29K	1	ATGGAGAACGATAAGTCGTTAGTTGCTTTGAAGAAGAAGACTTTTGAATTGCTCTAACTTT	60
TRV (HM195288)	5297	ATGGAA--GACAAGTCATTGGTTACGCTTAAGAAGAAGACTTTCGAAGTTTCGAAGTTT	5353
PepRSV-29K	61	AGTAGGTTGGGTTCCGGTCGAGTTGTTTCGTCGATTCAAAAAGAAAGAGACCGAAGTACTTT	120
TRV (HM195288)	5354	TCGAACTTAGGTGCTATTGAACTGTTTGTGGATGGTAGGAGAAAGAGACCGAAGTATTTT	5413
PepRSV-29K	121	CACAGACGTAGGCAGGTTGTTTTGAATAATGTAGCAGGCTCTTAACTGAACACAAGTTA	180
TRV (HM195288)	5414	CATAGAAGAAGAGAGACTGTCCATAATCATGTTGGTGAAAGAAGAGTGAACATAAGTTA	5473
PepRSV-29K	181	GGTGTCTTCAAAGTAGAAGATGTTGGAAGAATCAAGAGTTATGCCTTCTTGAGGATCGTA	240
TRV (HM195288)	5474	GACGTTTTTGATCAGAGGGACTACAAAATGATTAATCTTACGCGTTTTTGAAGATAGTA	5533
PepRSV-29K	241	GCAATTCAACTTGTTGTGTCTTCGCATTACCTAGGGATACCCCTGGGCACTTGCAGGTT	300
TRV (HM195288)	5534	GGTGTGCAACTTGTTGTGTACATCACATCTACCTGCAGATACGCTGGGTTTTATTCAAATC	5593
PepRSV-29K	301	GACATTTTGATACCTCGTCTTACGGATGGGAGAAAAGAAAACAAGGTCTTGCAAGGTTT	360
TRV (HM195288)	5594	GATCTGTTGGATTCGAGACTTACTGAGAAAAGAAAAGAAAGACTATTCAGAGATTC	5653
PepRSV-29K	361	ATGGCCAAAGCCTGTGATAACACTTCTTTGATTGATTAGTATAAGTTCGATTACTGCGTGAGT	420
TRV (HM195288)	5654	AAAGCTCGAGCTTGCATAAATTGTTTCAAGTTCGCGAGTACAAGGTTGAATACAGTATTTCT	5713
PepRSV-29K	421	ACCAGCGAAAATCTTGCAGACCTTGGCACATTTGGTACAGTGGCTACTGGAGTACCAGTT	480
TRV (HM195288)	5714	ACACAAGAGAATGTACTCGATGTCTGGAAGGTGGGTTGTATTTCTGAAGGCTTCCGGTC	5773
PepRSV-29K	481	GTAGATGGTTGTTTCCCGTTTAGTGTAGAAAATGCTTTAATTTGGGTTGCTACTGATTG	540
TRV (HM195288)	5774	TGTGACGGTACATAACCCTTTCAGTATTGAAGTGTGCTCATTGGGTTGCTACTGATTG	5833
PepRSV-29K	541	ACTACTCGGTTAAATCCTGAAGAGCTGAACAGTACCGATTATTTAGAAGGTGACTTTAGT	600
TRV (HM195288)	5834	ACTAGGCGTCTTAATGTGGAAGAAGTGAACAGTTCAGATTACATTGAAGGCGATTTTACC	5893
PepRSV-29K	601	GATCAGAGTCAATTTGAAGAGTATATGAGCTTAAATCAAGTCAAAGCGAAAGCGATTGAT	660
TRV (HM195288)	5894	GATCAGGAGGTTTTCCGGTGGATTTCATGCTTTGAAACAAGTTGAGATGAAGACGATTGAG	5953
PepRSV-29K	661	GTCAAGTTCAAAGGTGAGTATGTGCTTAAACTTAGGCAGGATAGAAAAT--TTGGCTTCGT	718
TRV (HM195288)	5954	GCGAAGTATGACGGTCTTACAGACC--AGCTACTACTAGACCAAAATCATTTGTTGTCGA	6013
PepRSV-29K	719	TAGAAAAGATTCCGCA--GTCAATTGTGAAAG--CGGC--AAGCATAAAGAAAAA	768
TRV (HM195288)	6014	GTGAAGATGTTAAGGGAGCGTCTAAAAGAAAAACTCGTCTTAATGCATAAAGAAATTT	6072

Sequence alignment of PepRSV 12K ORF versus *Tobacco rattle virus* (TRV)

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PepRSV-12K      1  ATGACGAAGTGTGCTCTACCTGAATGTGAA-GAAAATACTCAGAAGAATCAGATGACCTG  59
TRV (HM195288) 6058 ATGACGT-GTGTACTCAAGGGTTGTGTGAATGAAGTCACTGTTCTTGGTCACGAGACGTG
PepRSV-12K      60  TTCAATGAAACATGCTAATAAATAATAATAGGTATTTAGCTAGTAAGTTCGATGTAAAAAG  119
TRV (HM195288) 6059 TTGTATGGTCATGCTAACAAGTTGCCGAAAGCAAGTTGCTGACATGGTTGGTGTACGCG
PepRSV-12K      120 AAAATGCGAGTGCAAGAAGTGTGGTTGGTTT-CCTGCGATATCAGTTCAACCTGATTACG  178
TRV (HM195288) 6060 TAGGTGTGCGGAAAATAATGTGGATGGTTGTCTGTGTTGTTA--TCAATGATTTTACT
PepRSV-12K      179 TG-GAAGTCTACTTCTGTTGTGGCATGAAGCATTTACAAAAGTG-----CAA  225
TRV (HM195288) 6061 TTTGATGTGTATAATTGTGTGGCCGTAGTCACCTTGAAAAGTGTCTGTAAGCGTGTGCGAA
PepRSV-12K      226 ACCGATAATCCTTTAAAGGAGAAACGGTTGAACACAC-CAAAAAGACT-GTTTAGAGATG  283
TRV (HM195288) 6062 GCGAGAAATCGAGAAGTCTGGAACAGATTC AACGAGCTCGGAAAAGATACGTTTGTACAG
PepRSV-12K      284 ATGTAGATTTTGGTCTT--AATTTACTGTTTAGTGAG-GTGTGT  324
TRV (HM195288) 6063 CTAAAAGTCTCATAATTGAAATCCCAAAAAGGGAGAGAGAAT

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Figure S3. (A) Sequence alignment of PepRSV sequences. 668 nucleotides of sequence was obtained after sequencing a PCR product amplified using generic tobnavirus primers from reverse-transcribed RNA extracted from PVX 2.7-infected *Arabidopsis*. The top BLAST hit is shown (accession number L23972), which corresponds to the *Pepper ringspot virus* RNA1 genome sequence. Sequence alignments are shown between the published PepRSV sequence (JF268315) and the sequences amplified from *N. benthamiana* infected with PVX 2.7-derived PepRSV with either PRSV29KXbaI.R+PRSV29KBamH.R (PepRSV-29K ORF) or PRSV12KXbaI.F+PRSV12KBamHI (PepRSV-12K ORF). Mismatches are boxed in black. (B) The same sequences used in (A) were aligned with their corresponding regions in *Tobacco rattle virus* (TRV: accession number HM195288). Overall identity in these regions was found to be 55%, 62% and 54% respectively, for the RNA1 PCR product, the 29K ORF and the 12K ORF sequences.