

**Table S1** Oligonucleotide primers used in this study.

<b>Primer</b>	<b>Sequence (5' – 3')</b>
Ca1F	GGAACTTGACGGCGTTGCCTAGCGCCTCC
Ca1R	ACCAATAGCATGTGTGGCGTTGGTAGTCC
Ca2-2F	GCTCACCCATTGATAGGCGATCCACT
Ca2-2R	TCCTCCATTGTTTGGGCCCTTGTCATC
Ca2-3F	ACAGCAATAATCCTGGCGATAGTGATG
Ca2-3R	AAGTCTCAAAAATTCAACACAAAATTCCC
Ca3F	AGAGTTTGTCTCAACAGAGATCACCC
Ca3R	TCTTAGGTTTGCACCTCAGCCCGGGTA
At-IRS-FW	CCGTAGGTGAACCTCGGAGGG
At-IRS-RV	GGTGATCCCGCCTGACCTGG
Rp2-1F	CGGAAATTTGAGTGACGTCCCGG
Rp2-1R	CGAATCTTATGATACGACCTTG
Rp3-2F	CATCTGGGTGTAGGCGTATTTCG
Rp3-1/2R	ATCTTACGCATTGATCTAATACA
Rp3-2F	GTAAGGTGTTAGGACCCTCACGAG
5.8T Rp-ITS2F	CTAAGCGGTGGATCACTCGG
28T Rp-ITS2R	GCACTATCAAGCAACACGACTC

**Table S2**

GenBank/Refseq accession numbers of sequences compared in Figures 3, 4 and 7.

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Virus names (abbreviation), GenBank/Refseq accession no.

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The sequence data of other viruses used for analysis are as follows.

**Replicase :**

*Virgaviridae*, *Furovirus*, soil-borne wheat mosaic virus (SBWMV): AAA48492, soil-borne cereal mosaic virus (SBCMV): CAB56599, Chinese wheat mosaic virus (CWMV): CAB41769, oat golden stripe virus (OGSV): CAB57882, sorghum chlorotic spot virus (SrCMV): NP\_659020, *Pomovirus*, potato mop-top virus (PMTV): CAB58364, beet virus Q (BVQ): CAA11457, beet soil-borne virus (BSBV): CAB10764, broad bean necrosis virus (BBNV): BAA34692, *Peculvirus*, peanut clump virus (PCV): NP\_620047, Indian peanut clump virus (IPCV): NP\_835282, *Hordevirus*, barley stripe mosaic virus (BSMV): AAA46336, AAA66600, *Tobravirus*, tobacco rattle virus (TRV): AAC02066, pea early browning virus (PEBV): CAB37343, *Tobamovirus*, tomato mosaic virus (TMV): NC\_001367, cucumber green mottle mosaic virus (CGMMV): NC\_001801, *Hepeviridae*, *Hepevirus*, hepatitis E virus (HEV sar-55, Subgroup 1): AAL50058, (HEV mexico, Subgroup 2): AAA45730, (HEV T1, Subgroup 4): CAB83209, swine hepatitis E virus (sHEV, Subgroup 3): ABB88699, avian hepatitis E virus (aHEV): AAS45830; *Togaviridae*, *Rubivirus*, rubella virus (RubV):NP\_062883; *Tetraviridae*, *Betatetravirus*, Nudaurelia capensis beta virus (NbetaV):NP\_048059, *Omegatetravirus*, Dendrolimus punctatus virus (DpTV): AAT27317, *Helicoverpa armigera* stunt virus (HasV): AAC98529; unassigned virus, *Sclerotinia sclerotiorum* RNA virus L (SsRVL) : ACE88957.

**AkIB like domain:**

*Alphaflexiviridae*, *Potexvirus*, alternanthera mosaic virus (AltMV): ACS28233, asparagus virus 3(ASV3): BAG12158, alstroemeria virus X (AlsVX): YP\_319827, *Mandarivirus*, Indian citrus ringspot virus (ICRV): NP\_203553; *Betaflexiviridae*, *Carlavirus*, hippeastrum latent virus (HipLV): AAZ15106, hop latent virus (HpLV): NP\_066258, lily symptomless virus (LSV): CAM12349, narcissus common latent virus (NCLV): CAJ43605, poplar mosaic virus (PopMV): AAR89414, potato virus M (PVN): AAP76201, potato virus S (PVS): YP\_277428, red clover vein mosaic virus (RCVMV): ACN58188, *Citivirus*, citrus leaf blotch virus (CLBV): NP\_624333, *Foveavirus*, apple stem pitting virus (ASPV): BAA04853, ABV56203, rupestris stem pitting-associated virus (RSPaV): ABX55879, *Vitivirus*, grapevine virus A (GBA):ABH06983, grapevine virus B (GVB): CAA53196. *Trichovirus*, cherry mottle leaf virus (ChMLV), NP\_062428; *Closteroviridae*, *Ampelovirus*, grapevine leafroll-associated virus 3 (GLRaV-3): NP\_813795, unassigned genus, little cherry virus 2 (LCHV2): AAM96220; *Potyviridae*; unassigned genus, blackberry virus Y (BVY): AY994084; *Secoviridae*, *Sadwavirus*, black raspberry necrosis virus (BRNV): YP\_654555; Bacteria, *Escherichia coli* K-12: P05050; *Caulobacter vibrioides*: O05725.

**CP and TGB:**

*Virgaviridae*, *Furovirus*, SBWMV: NC\_002042, SBCMV: NC\_002330, CWMV: NC\_002356, OGSV: NC\_002357, SrCMV: NC\_004015, *Pomovirus*, PMTV: NC\_003724, NC\_003725, BVQ: NC\_003511, NC\_003512, BSBV: NC\_003518, NC\_003519, BBNV: NC\_004424 NC\_004425, *Peculvirus*, PCV: NC\_003668, IPCV: NC\_004730, *Hordevirus*, BSMV: NC\_003481, *Poa semilatifolia* virus (PSLV): M81486, *Lychnis ringspot virus* (LRSV): Z46351, *Tobravirus*, TRV: NC\_003811, PEBV: NC\_001368, *Tobamovirus*, TMV: NC\_001367, CGMMV: NC\_001801, *Tymovirales*, *Betaflexiviridae*, *Carlavirus*, potato virus M (PVM): NC\_001361, red clover vein mosaic virus (RCVMV): NC\_012210.

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