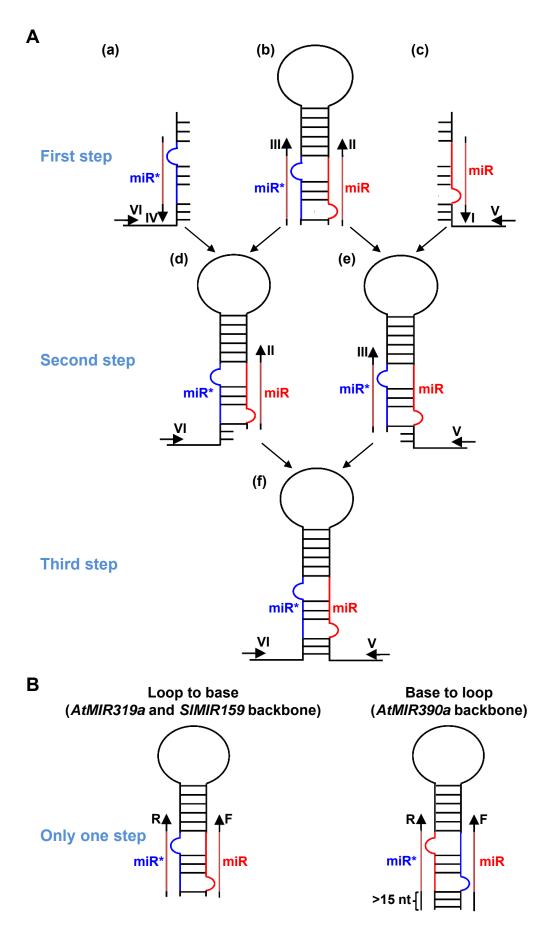


Supplemental Figure S1. Silence of *PDS* by TYLCCNV-amiRPDS(319L) in *N. benthamiana. PDS*-silencing phenotype in *N. benthamiana* plants inoculated with TYLCCNV-amiRPDS(319L). TYLCCNV empty vector inoculated plants were used as negative control. Photographs were taken at 30 dpi.



Supplemental Figure S2. Diagram of constructing amiRNA precursor by three-step and one-step PCR. A, Diagram of constructing amiRNA precursor by three-step PCR. I, II, III, IV, V and VI were the six primers. B, Diagram of constructing amiRNA precursor by only one-step PCR. F and R were the two primers. Sequence in red color meant amiRNA, and in blue color meant amiRNA*. Bulge meant unmatched base.

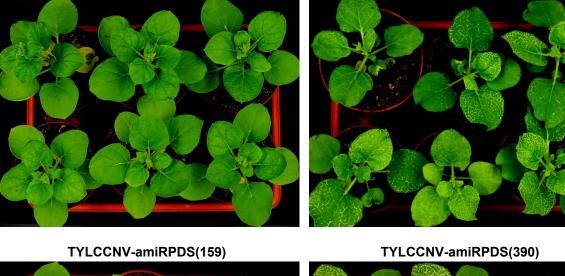
pri-amiRPDS(319)

A A U C UC G U A – U AC C AA C GCCAAAA
5' GAGC CCAAUCAGUC AUGUUG UCA AGG GU A AUGAUUCAAUU G CU CCG UCAUUCAU CA UA CGAGUC U
3' CUCG GGUUAGUCAG CAUAAC AGU UCU UA U UACUAGGUUAA C GA GGC AGUAAGUA GU AU GCUCAG U
G A U U CU G – A A U GU A AA U AUCAAAC
pri-amiRPDS(159)
GU AUUUGCUUUCUUAUU
5' GCCCCAAU GUCUAUGUUGAAGA GAUC AACA GGU AGAU GAGCU CUGAC UAUG GA CC CAG CCUAUCUA UAUG U
3' CGGGGUUA CAGAUACAACUUUU CUAG UUGU CCA UUUA UUCGA GACUG AUAC UU GG GUU GGAUAGAU AUAC C
GU A U UUC U U G U G UG U U AAA
pri-amiRPDS(390)
5' AAA AUUA <mark>C</mark> U-CA
GUAG AGAAGA C GU UCAACAUAGA UGAUUGGGGGCA GAU GAU AC U
3' ACAUC UCUUCU G UA AGUUGUAUCU ACUAACCCCGU UUA CUA UG U
AU CGUC U UUUUUC

Supplemental Figure S3. Secondary structures of pri-amiRPDS(319), pri-amiRPDS(159), and pri-amiRPDS(390). Sequence in red color meant amiRNA, and in blue color meant amiRNA*. Bulge meant unmatched base.

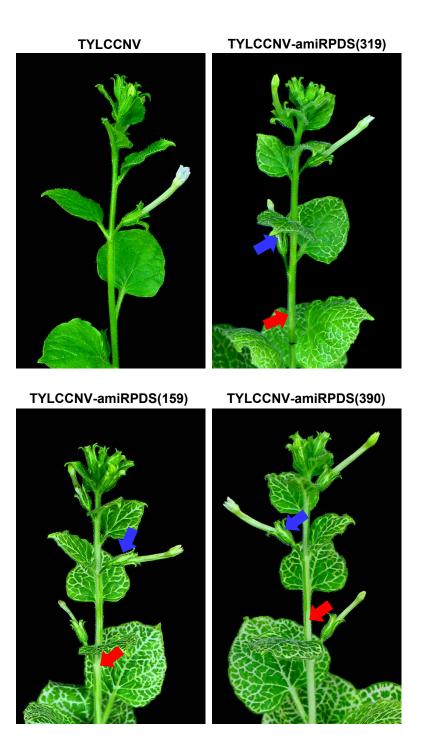
TYLCCNV

TYLCCNV-amiRPDS(319)

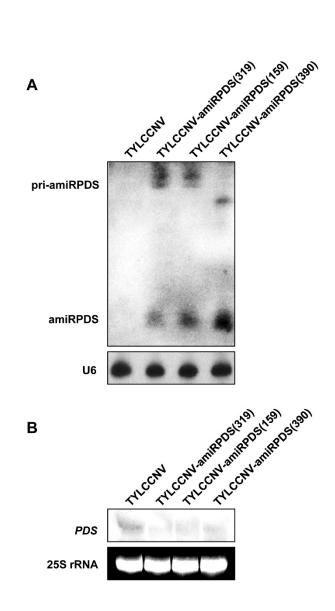




Supplemental Figure S4. Silence of *PDS* by TYLCCNV-amiRPDS vectors in different miRNA backbones in *N. benthamian. PDS*-silencing phenotype in *N. benthamiana* plants inoculated with TYLCCNV-amiRPDS(319), TYLCCNV-amiRPDS(159) and TYLCCNV-amiRPDS(390). TYLCCNV empty vector inoculated plants were used as negative control. Photographs were taken at 25 dpi.



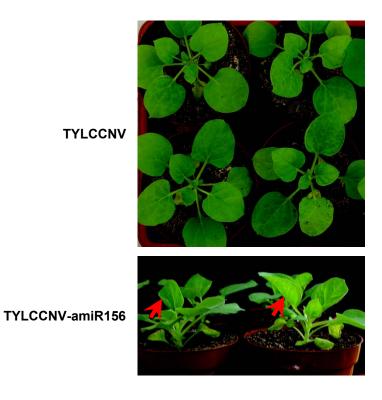
Supplemental Figure S5. Phenotype of amiRPDS precursors in different miRNA backbones at 45 dpi. *PDS*-silencing phenotype in *N. benthamiana* plants inoculated with TYLCCNV-amiRPDS(319), TYLCCNV-amiRPDS(159) and TYLCCNV-amiRPDS(390). TYLCCNV empty vector inoculated plants were used as negative control. Photographs were taken at 45 dpi.



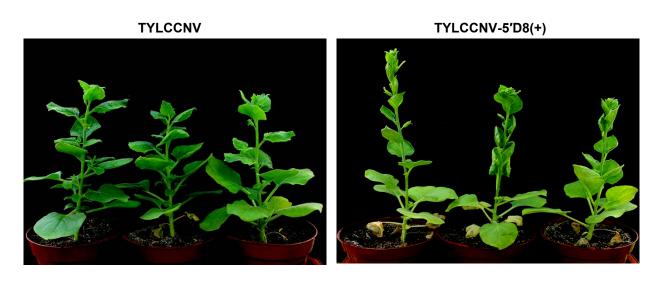
Supplemental Figure S6. Northern blot analysis of amiRPDS, pri-amiRPDS and *PDS* in plants inoculated with TYLCCNV or TYLCCNV-amiRPDS vectors in different miRNA backbones. A, Northern blot assays of amiRPDS and pri-amiRPDS in plants inoculated with TYLCCNV or TYLCCNV-amiRPDS vectors in different miRNA backbones. U6 was used as the loading control. B, Northern blot assays of *PDS* in plants inoculated with TYLCCNV or TYLCCNV or TYLCCNV-amiRPDS vectors in different miRNA backbones. GelStain (Transgen, Beijing) staining of 25S rRNA was used as the loading control.

pri-amiR156	5' AAA AU U A GU - C A GUAG AGAAGA C GU UGACAGAAGA AGUGAGCACA GAU GAU AC U 3' ACAUC UCUUCU G UA ACUGUCUUCU UCACUCGUGU UUA CUA UG U AU CG U C A UUU U U C
pri-5´ D8(+)	5' AAA AU U A GU - C A GUAG AGAAGA C GU UCUUGACCUU UAAGGCCUUUA 3' ACAUC UCUUCU G UA AGAACUGGAA AUUCCGGGAAU UUA CUA UG U AU CG U C A UUU U U C
pri-amiRSu	5' AAA AU U A AU - C A GUAG AGAAGA C GU UAAUUAGGAU AAUCGGGCCCA GAU GAU AC U 3' ACAUC UCUUCU G UA AUUAAUCCUA UUAGCCCGGGU UUA CUA UG U AU CG U C G UUU U U C
pri-amiRPCNA	5' AAA AU U A A AU - C A GUAG AGAAGA C GU UAUAGUGCUC AAACCCUCACA GAU GAU AC U 3' ACAUC UCUUCU G UA AUAUCACGAG UUUGGGAGUGU UUA CUA UG U AU CG U C G UUU U U U C

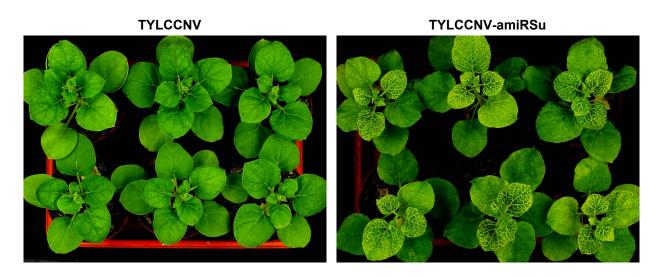
Supplemental Figure S7. Secondary structures of pri-amiR156, pri-5' D8(+), pri-amiRSu, and amiRPCNA. Sequence in red color meant amiRNA, and in blue color meant amiRNA*. Bulge meant unmatched base.



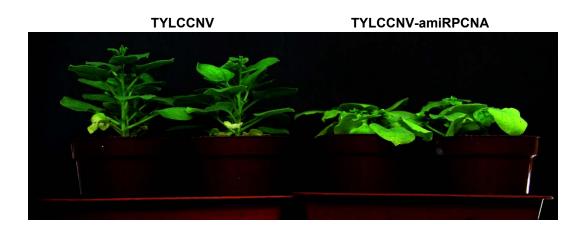
Supplemental Figure S8. Overexpression of miR156 by TYLCCNV-amiR156 in *N. benthamiana*. The phenotype of overexpressing miR156 in *N. benthamiana* plants inoculated with TYLCCNV-amiR156. TYLCCNV empty vector inoculated plants were used as negative control. Photographs were taken at 14 dpi.



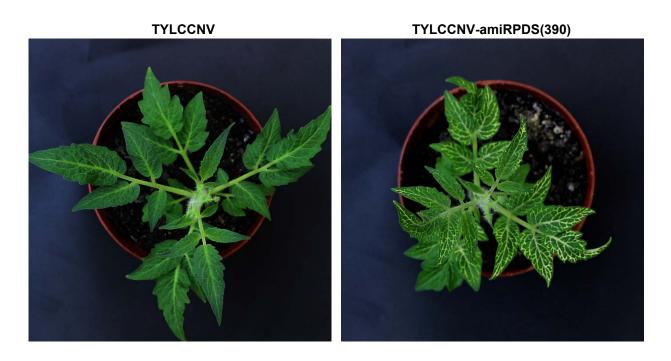
Supplemental Figure S9. Overexpression of 5' D8(+) by TYLCCNV-5' D8(+) in *N. benthamiana*. The phenotype of overexpressing 5'D8(+) in *N. benthamiana* plants inoculated with TYLCCNV-5' D8(+). TYLCCNV empty vector inoculated plants were used as negative control. Photographs were taken at 30 dpi.



Supplemental Figure S10. Silence of *Su* by TYLCCNV-amiRSu in *N. benthamiana. Su*-silencing phenotype in *N. benthamiana* plants inoculated with TYLCCNV-amiRSu. TYLCCNV empty vector inoculated plants were used as negative control. Photographs were taken at 25 dpi.



Supplemental Figure S11. Silence of *PCNA* by TYLCCNV-amiRPCNA in *N. benthamiana. PCNA*-silencing phenotype in *N. benthamiana* plants inoculated with TYLCCNV-amiRPCNA. TYLCCNV empty vector inoculated plants were used as negative control. Photographs were taken at 25 dpi.



Supplemental Figure S12. *PDS*-silencing phenotype in tomato plants inoculated with TYLCCNVamiRPDS(390). TYLCCNV empty vector inoculated plants were used as negative control. Photographs were taken at 4 weeks post infiltration.