Supporting Information

Qiao et al. 10.1073/pnas.1421475112

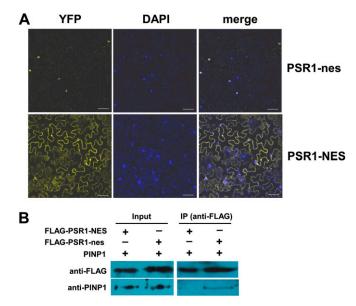


Fig. S1. Fusion to a NES impaired the interaction of PSR1 with PINP1 in plant cells. (*A*) Fusion to NES changed the localization of PSR1. Confocal microscopy of *N. benthamiana* epidermal cells showing the subcellular localization of PSR1–NES–YFP and PSR1–nes–YFP. DAPI staining was used to visualize the nuclei. Please note that the overall fluorescence was decreased to better visualize the predominant nuclear localization of PSR1–nes–YFP; the nuclear localization was completely lost by PSR1–NES–YFP. (Scale bars: 50 μ m.) (*B*) Coimmunoprecipitation of PSR1–NES or PSR1–nes with PINP1. The 3x–FLAG–PSR1–NES/nes and PINP1 were coexpressed in *N. benthamiana*. The protein complex was pulled down by using anti-FLAG resins, and the enrichment of PINP1 was detected by an anti-PINP1 antiserum. This experiment was repeated twice with similar results.

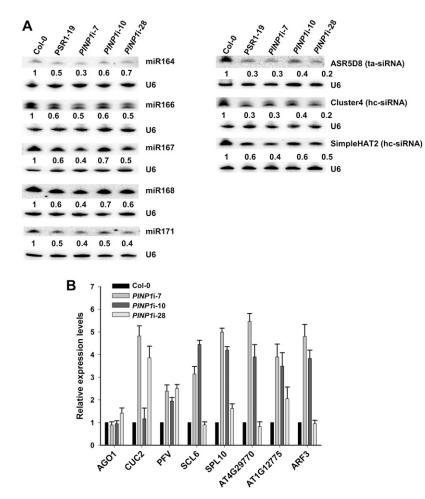


Fig. 52. PINP1 affects small RNA accumulation in *Arabidopsis*. (A) Abundances of endogenous small RNAs in wild-type (Col-0), *PSR1*-expressing (PSR1-19), and *PINP1*-silenced plants were determined by Northern blotting. U6 served as an internal control. The numbers below the gel images represent relative small RNA abundance. (B) Transcript levels of small RNA target genes were determined by qRT-PCR. *AGO1, CUC2, PHV, SCL6,* and *SPL10* are targets of miR168, miR164, miR165/166, miR171, and miR156/157, respectively. At4g29770, At1g12775, and *ARF3* are targets of ta-siRNAs generated from *TAS1, TAS2,* and *TAS3,* respectively. *AtUBQ10* was used as the internal standard. This experiment was repeated twice with similar results.

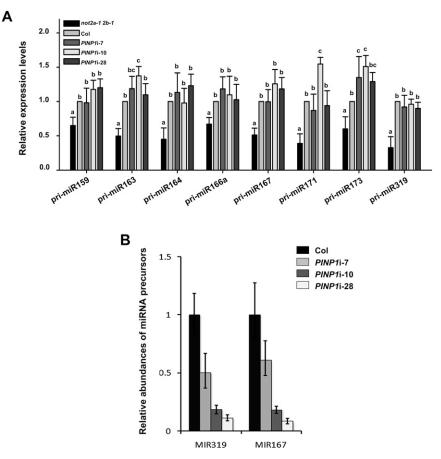


Fig. S3. PINP1 affects the pre-miRNA, but not pri-miRNA, levels. (A) Silencing of *PINP1* does not interfere with the transcription of *MIR* genes. Transcript abundances of pri-miRNAs in wild-type (Col-0), *PINP1*-silenced plants, and the *not2a-1 2b-1* mutant were determined by qRT-PCR. *AtUBQ10* was used as the internal standard. Values are means \pm SDs (as error bars) from three independent replicates. Letters represent differences with statistical significance (*P* < 0.05) as determined by Duncan's multiple range test. (*B*) Levels of miR319 and miR167 precursors were determined by qRT-PCR in wild-type (Col-0) and *PINP1*-silenced plants. Primers were designed to anneal to the stem portion of the hairpins to amplify the reverse-transcribed products of both pri-miRNAs and pre-miRNAs. Because the abundances of pri-miR167 and pri-miR319 remain unchanged in *PINP1*-silenced plants (Fig. 2D), the decreased levels of miRNA precursors observed here were presumably due to lower levels of pre-miRNAs. This experiment was repeated twice with similar results.

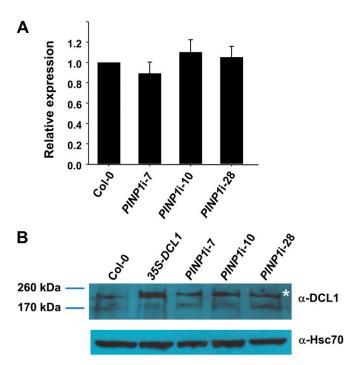


Fig. S4. Transcript and protein levels of DCL1 in *PINP1*-silenced plants. (*A*) *dcl1* transcript levels were determined by qRT-PCR in wild-type (Col-0) and *PINP1*-silenced lines. (*B*) DCL1 protein abundances were determined by Western blotting using an anti-DCL1 antibody (Agrisera) in wild-type (Col-0), *p35S*-DCL1, and *PINP1*-silenced plants. * labels the protein band corresponding to DCL1 with a predicted molecular mass of 210 kDa. Hsc70 was detected by using an anti-Hsc70 antibody as a loading control. Protein sample extracted from *Arabidopsis* plants overexpressing DCL1 was used as a control. This experiment was repeated twice with similar results.

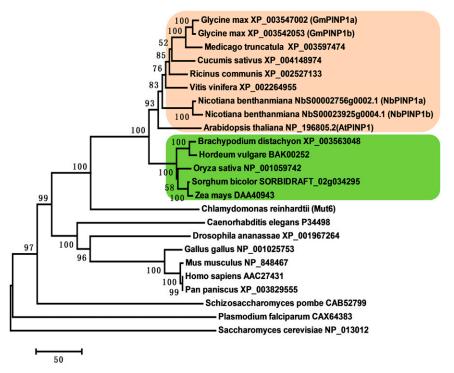


Fig. S5. Phylogenetic analysis of PINP1 homologs in fungi, plants, and animals. Neighbor-joining tree of 24 PINP1 homologs, all containing the DEAH-box RNA helicase domain, was constructed by using full-length amino acid sequences. The clade containing PINP1 homologs in dicots is highlighted in yellow, and the clade with PINP1 homologs in monocots is highlighted in green. The soybean homologs GmPINP1a and GmPINP1b can also interact with PSR1 (Fig. 1A).

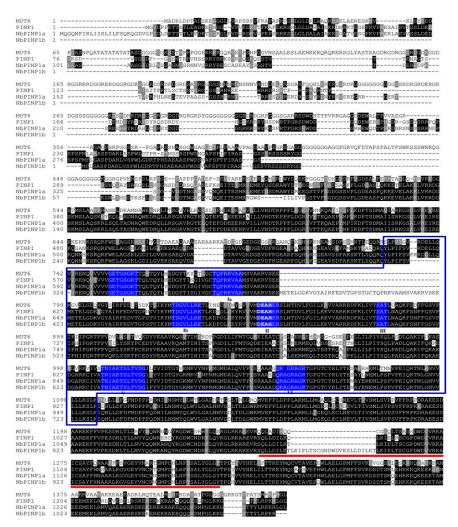


Fig. S6. Amino acid sequence alignment of MUT6 and PINP1 homologs in *Arabidopsis* (PINP1) and in *N. benthamiana* (NbPINP1a and NbPINP1b). The blue box denotes the DEAH RNA helicase domain, and the conserved motifs are highlighted in blue. The red line labels the region of a conserved DUF1605 domain with unknown functions. Identical residues are shaded in black, and similar residues are shaded in gray.

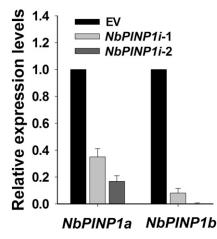


Fig. 57. qRT-PCR analysis of the transcript abundances of *NbPINP1a* and *NbPINP1b* in *N. benthamiana* inoculated with *Agrobacterium* harboring either the empty VIGS vector TRV2–LIC (EV) or TRV2–LIC carrying the silencing constructs *NbPINP1i*-1 or *NbPINP1i*-2. 18S rRNA was used as the internal standard. Error bars are SEs of three biological replicates. This experiment was repeated twice with similar results.

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T-DNA lines	Homozygous plants	Heterozygous plants	Wild-type	χ ² (2:1)	P value
CS24359	0	35	18	0.01	0.9203
SALK_062354	0	38	18	0.02	0.8875
SALK_019541	0	34	17	0.00	1.0000

Table S1. Characterization of T-DNA mutants of PINP1 in Arabidopsis eco. Col-0

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Table S2. Strains and plasmids used in this study

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Strains or plasmids	Description	Source
E. coli DH5α	F- Φ80dlacZΔM15 Δ(lacZYA-argF) U169 recA1 endA1, hsdR17(rk-, mk+) phoA supE44 λ- thi-1 gyrA96 relA1	Invitrogen
E. coli BL21(DE3)	F– ompT gal dcm lon hsdSB (rB- mB -) λ(DE3 [lacl lacUV5-T7 gene 1 ind1 sam7 nin5]	Invitrogen
Agrobacterium tumefaciens GV3101(pMP90)	Deletion of T-DNA of pTiC58, Rif ^R , Gent ^R	Holsters (1)
A. tumefaciens C58C1 (pCH32)	Rif ^R , Tet ^R	Mudgett et al. (2
P. infestans isolate 1306	Tomato and potato pathogen, can infect N. benthamiana	Cvitanich and Judelson (3)
Phytophthora capsici strain LT263	Isolated from pumpkin, can infect Arabidopsis	Donahoo and Lamour (4)
pEG100	pEarleyGate100, a Gateway binary vector with cauliflower mosaic virus 35S promoter, Kan ^R	Earley et al. (5)
pEG100:: <i>PSR1A</i>	pEG100 carrying PSR1A, Kan ^R	This study
pEG100:: <i>3×FLAG–PSR1</i>	pEG100 carrying PSR1 tagged with 3×FLAG at N terminus, Kan ^R	This study
pEG100:: <i>3×FLAG–PSR1–NES</i>	pEG100 carrying PSR1–NES (LALKLAGLDI) tagged with 3×FLAG at N terminus, Kan ^R	This study
pEG100::3×FLAG–PSR1–nes	pEG100 carrying PSR1–nes (LALKAAGADA) tagged with 3×FLAG at N terminus, Kan ^R	This study
pEG100:: <i>3×FLAG–PSR1A</i>	pEG100 carrying PSR1A tagged with 3×FLAG at N terminus, Kan ^R	This study
pEG100::3×FLAG–PSR1M	pEG100 carrying <i>PSR1M</i> tagged with 3×FLAG at N terminus, Kan ^R	This study
pEG100::amiRPINP1	pEG100 carrying amiRNA for PINP1 silencing, Kan ^R	This study
pENTR1A	An entry vector for gateway system, Kan ^R	Invitrogen
pENTR1A:: <i>PSR1A</i>	pENTR/D-TOPO carrying the <i>PSR1</i> gene, Kan ^R	This study
pENTR1A:: <i>3XFLAG–PSR1</i>	pENTR/D-TOPO carrying the PSR1 gene with 3xFLAG tag at the N terminus, Kan ^R	This study
pENTR1A:: <i>3XFLAG–PSR1A</i>	pENTR/D-TOPO carrying the PSR1A gene with 3xFLAG tag at the N terminus, Kan ^R	This study
DENTR1A::3XFLAG-PSR1M	pENTR/D-TOPO carrying the <i>PSR1M</i> gene with 3xFLAG tag at the N terminus, Kan ^R	Qiao et al. (6)
DENTR1A::PINP1	pENTR/d-TOPO carrying the <i>PINP1</i> gene, Kan ^R	This study
pEG101	pEarleyGate101, a Gateway binary vector carrying cauliflower mosaic virus (CaMV) <i>355</i> promoter and <i>YFP</i> , Kan ^R	Earley et al. (5)
pEG101:: <i>PSR1</i>	pEG101 carrying PSR1 in-frame fused to YFP, Kan ^R	Qiao et al. (6)
pEG101:: <i>PINP1</i>	pEG101 carrying PINP1 in-frame fused to YFP, Kan ^R	This study
pEG104	pEarleyGate104, a Gateway binary vector carrying P35S-YFP, Kan ^R	Earley et al. (5)
pEG301	pEarleyGate301, a Gateway binary vector without a promoter, Kan ^R	Earley et al. (5)
pEG301-pUBQ10:: <i>PSR1</i>	pEG301 carrying PSR1 with the UBQ10 promoter, Kan ^R	This study
pEG301-pUBQ10:: <i>amiRPINP1</i>	pEG301 carrying an amiRNA for <i>PINP1</i> silencing with the UBQ10 promoter, Kan ^R	This study
pGEX4T-2	<i>E. coli</i> expression vector with a C-terminal GST tag, Amp ^R	Amersham
pGEX4T-2:: <i>PSR1</i>	pGEX4T-2 carrying PSR1 which expresses GST-PSR1, Amp ^R	This study
pET-mal	malE gene from pMAL-c2 is cloned into Ndel-Xhol site of pET28a, Kan ^R	Sweeney et al. (7
pET-mal:: <i>PINP1</i>	pET-mal carrying <i>PINP1</i> , Kan ^R	This study
pGBKT7	A yeast bait vector expressing proteins fused to the GAL4 DNA binding domain, Kan ^R	Clontech
pGBKT7:: <i>PSR1</i>	pGBKT7 carrying <i>PSR1</i> , Kan ^R	This study
pGADT7	A yeast prey vector expressing proteins fused to the GAL4 activation domain, Amp ^R	Clontech
pGADT7:: <i>PINP1</i>	pGADT7 carrying <i>PINP1</i> , Amp ^R	This study
pGADT7::GmPINP1a	pGADT7 carrying <i>GmPINP1a</i> , Amp ^R	This study
pGADT7::GmPINP1b	pGADT7 carrying G <i>mPINP1b</i> , Amp ^R	This study
DSPYNE	A binary vector carrying CaMV 35S promoter and the N-terminal (1-155 aa) domain of YFP for BiFC analysis, Kan ^R	Walter et al. (8)
pSPYCE	A binary vector carrying CaMV 35S promoter and the C-terminal (156-239 aa) domain of YFP for BiFC analysis, Kan ^R	Walter et al. (8)
pSPYNE:: <i>PSR1</i>	pSPYNE carrying <i>PSR1</i> in frame fused with nYFP, Kan ^R	This study
pSPYNE:: <i>PSR1A</i>	pSPYNE carrying <i>PSR1A</i> in frame fused with nYFP, Kan ^R	This study
pSPYNE:: <i>PSR1M</i>	pSPYNE carrying <i>PSR1M</i> in frame fused with nYFP, Kan ^R	This study
pSPYCE:: <i>PINP1</i>	pSPYCE carrying PINP1 in frame fused with cYFP, Kan ^R	This study
TRV1	A VIGS vector with 2x35S promoter and the cDNA sequence of TRV strain Ppk20 RNA1, Kan ^R	Dong et al. (9)
TRV2-LIC	A VIGS vector with 2x35S promoter and the cDNA sequence of TRV strain Ppk20 RNA2, Kan ^R	Dong et al. (9)
TRV2::NbPINP1i-1	TRV2 carrying fragment 1 between <i>NbPINP1a/b</i> genes for gene silencing, Kan ^R	This study
TRV2::NbPINP1i-2	TRV2 carrying fragment 2 between <i>NbPINP1a/b</i> genes for gene silencing, Kan ^R	This study

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4. Donahoo RS, Lamour KH (2008) Interspecific hybridization and apomixis between Phytophthora capsici and Phytophthora tropicalis. Mycologia 100(6):911–920.

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6. Qiao Y, et al. (2013) Oomycete pathogens encode RNA silencing suppressors. Nat Genet 45(3):330-333.

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9. Dong Y, Burch-Smith TM, Liu Y, Mamillapalli P, Dinesh-Kumar SP (2007) A ligation-independent cloning tobacco rattle virus vector for high-throughput virus-induced gene silencing identifies roles for NbMADS4-1 and -2 in floral development. Plant Physiol 145(4):1161–1170.

Table S3. Primers used in this study

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V2H AD-INITE CORLF CTACGRATECTOGGGTEARCATEURALATEA AD-INITE SCRIF CTACGRATECATOGGGTEARCATEURALATEA BD-PSRIECGILF CTACGRATECATOGGTACCACCONCOUNCE BD-PSRIECGILF CTACGRATECATOGGACACCONCOUNCE AD-GRIPIPIE-GORLF CTACGRATECATOGGACATGGTACCTERCONCE AD-GRIPIPIE-GORLF CTACGRATECATOGGACATGGTACCTERCONCE AD-GRIPIPIE-GORLF CTACGRATECATOGGACATGGTACCTERCONCE AD-GRIPIPIE-GORLF CTACGRATECATOGGACATGGTACCTACTGGTCCTCACCACCCCACCTERCONCE Pull-down assay GST-PSRIEGORLF CTACGRATECATOGGACACCTECACCACCCCACCCCCACCCCCACCCCCACCCCCACCCCACCCC	Experiment	Primer name	Primer sequence (5' to 3')		
BD-PSR1-EcoRI-F CTACGATTCATCATCACCOCCTORAGE BD-PSR1-BamHiR CTACGATTCATCATCACCOCCTORAGE AD-GOMINPI-ACIAR CTACGATTCATCACAACTTTTPACTCACACCOCCT AD-GOMINPI-CaIR-R CTACGATTCATCACAACTTTTPACTCACACCOCCT AD-GOMINPI-CaIR-R CTACGATTCATCACAACTTTTTPACTCACACCOCCT AD-GOMINPI-CaIR-R CTACGATTCATCACAACTTCATTCACAACCOCCTACACCOCCT AD-GOMINPI-CaIR-R CTACGATTCATCACAACTTCATTCACACCOCCAACTTCATTCACACCOCCTACACTTCATCACACTTCATCACACTCACACTTCATCA	Y2H	AD-PINP1 EcoRI-F	CTACGAATTCATGGGGGTTGATCCATTCAAAACTA		
BD-PSR1-BamHaR CDACGETICETOFECTOCOCCOUNT AD-GETINPIA-ECORF CDACGETICETOFECTOCOADCOCCOUNT AD-GETINPIA-ECORF CTACATCENTERTECTORAACCAACTTECTTERTECTOR AD-GETINPIA-CORF CTACATCENTERTECTOR AD-GETINPIA-CORF CTACATCENTERTECTOR AD-GETINPIA-CORF CTACATCENTECTORAACCAAACTTECTTEGECOCTE BFROMENTACORF CTACENTECTORACCAAACTTECTTEGECOCTE GST-PSR1-ECORF CTACENTECTORACCAAACTTECTTEGECOCTE BFROMENTACORF CTACENTECTORACCAACTCAAACTAACTA DSPYNE-PSR1-Xbal-F CTACETCACACTCAACTCAAACTA DSPYNE-PSR1-Xbal-F CTACETCACACTCACACCACCCCCCC DSPYNE-PSR1-KDIR-R CTACETCACACTCACACCACCCCCCCCC DSPYNE-PSR1-KDIR-R CTACETCACACTCACACCACCCCCCCCCCCCCCCCCCCC		AD-PINP1 Xhol-R	CTACCTCGAGTCACAGTCCAAGCTTCTTAGGCCTG		
AD-GmPINP14cDarF CTROCARDCONCONCOUNCE AD-GMPINP1bcDarF CTROCARDCONCONCONCONCONCONCONCONCONCONCONCONCONC		BD-PSR1-EcoRI-F	CTACGAATTCATGACTAAACCGTCGACGGAGGC		
AD-GmBINP16-ColarR AD-GmBINP16-ColarR CTACATCATTACAACCAACTTSTEGTCTC AD-GmBINP16-LorAlR CTACATCATTACAGACAACCAACTTSTEGTCTC AD-GmBINP16-LorAlR CTACCATCAACCATCAACCATCAACCACCACCACCACCAC		BD-PSR1-BamHI-R	CTACGGATCCGTCATTGTTCTAGCCACGCCT		
 AD-GmINPIDECoRI-F CTACGRATCARGENAGAGENEGACEGO Pull-down assay GST-PSR1-BamHFF CTACGRATCARGENAGCAMCTRCTTGTCCAGCGGACGC GST-PSR1-BamHFF CTACGRATCATCAGCGTCATCCAAACCTCCAGCCACCT MBP-NINPI-KORF CTACCTCCGATTCATACCTCCAACCTCAACCTCAACCTCCAACCTCAACCTCCCAACCTCCACCTTCCACCTCCAACCTCCAACCTCCACCTTCCACCTCCAACCTCCACCTCCCACCTCCCACCTCCCCCTCCAACCTCCACCTCCCCCTCCAACCTCCCCCTCCCACCTCCCCCC		AD-GmPINP1a-EcoRI-F	CTACGAATTCATGGAGAAGGATGGAGCTGGAGCTG		
Pull down assay GT-PSR1 hamH-F CTACGRATCACACCAACCTTOTEGOCTG GT-PSR1-EcoRL-R GT-PSR1-EcoRL-R CTACGRATCACAGCGACCGCTCAACGTCAACGTCACAGCACC GT-PSR1-EcoRL-R CTACGRATCACAGGGGGACGTCATCACAACGTCAAACGTCACAGCACCT pSPYCE-PSR1-Xbol-F CTACGCAACGTCATGGCGGTCAACGTCACAGCACCT pSPYCE-PNP1-Xbol-R CTACGTCACACATGGCGGTCGATCCACCTCAAACGTCCTAGGGGGA pSPYCE-PNP1-Xbol-R CTACGTCACACATGGCGGTCGATCCACCTCCAAGCTCCTAGGGGG pSPYCE-PNP1-Xbol-R CTACGTCACACATGGCGGTCGATCCACCTCCAAGCTCCTAGGGGG pSPYCE-PNP1-Xbol-R CTACGTCACACATGGCGGTCGATCCACCTCCAAGCTCCTACAAACCT CGC-PNP1-Xbol-R PSPYCE-PNP1-Xbol-R CTACGTCCACATGGGGGTCGATCCACCTCCAAGCTCTACAAACCT CGC-PNP1-XB0-FR PSPYCE-PNP1-Xbol-R CTACGTCCACATGGGGGTCGATCCACCTCCAAGCTCCTACAAACCT CGC-PNP1-XB1-F PSPYCE-PNP1-Xbol-R CTACGTCCACATGGGGGTCGATCCACCACCTCCAAGCTCTCTAGGCACT TST08PSR1-Xbal-R CTACGTCCAAGCTCGCAAGCTCTCTAGGCACTT ST08PSR1-Xbal-R PETR-PNP1-XB1-F CTACGCAAGCACGTCGCAAGCTTCTCAGGCACT ST00PSR1-Xbal-R PETR-PNP1-XB1-R CTACGTCAAGCACCTCGCAAGCTCTCTGGCAACCTTCTGGCAACCTTCTGGCAACCTTCGGCACT TST08PSR1-Xbal-R PDNP1-VGS2-R CGCCACAAGACCCCTTGGTAGGCACAT AGG01-R CGCCACAAGCACCCTGGCGCACACACT GUC2-F CUC2-F CUC2-F CUC2-F CUC2-F CUC2-F CGCCCACGTCAAGCACCACCCCCACACCACACCCCACACCCCCACACCCCCC			CTACATCGATTTACAAACCAAACTTCTTTGGTCTC		
Pull-down assayGT-PSR1 EamI-IFCTACGRATCCATGRATAACCGTCCGRAGCAGFT-PSR1 EcoRI-RCTACGRATTCGTCCATTCTAACCGTCCATGCAAACCAMBP-NIP1-EcoRI-FCTACCTCGGGTGATCCATTCAAACCABFTCE-PSR1-Abal-RCTACCTCGGGTGATCCATTCAAACCABFTCE-PSR1-Abal-RCTACCTCGGGTGGATCGACGCTGGACGGGGGGTGATCCATTCAAACCABFTCE-PINP1-SaII-FCTACGGTACCTGGGGGTGATCCATTCAAACCAPSPYCE-PINP1-SaII-FCTACGGTACCTGGGGGTGATCCATTCAAACCAPSPYCE-PINP1-SaII-FCTACGGTACCTGGGGGTGATCCATTCAAACCAAACCAPSPYCE-PINP1-SaII-FCTACGGTACCTGGGGGGTGATCCATTCAAACCATTCAAACCAACC		AD-GmPINP1b-EcoRI-F	CTACGAATTCATGGAGAAGGATGGAACTGGTGCTG		
GST-PSRI-EGBLR MBP-PINP1-Ktol-R CTACGAATTCATGATGGGTTGATCGAACGAC MBP-PINP1-Xtol-R CTACCTGAATGATCGAACGACGAC pSPYNE-PSRI-Xbol-F CTACCTGAAGTGATCGAACGACGAC pSPYNE-PSRI-Xbol-F CTACCTGAAGTGCACTGAACGGAC pSPYNE-PSRI-Xbol-F CTACCTGAAGTGCACTGCAACGGAC pSPYNE-PSRI-Xbol-F CTACCTGAAGTGCAACTGCAACGGAC pSPYNE-PSRI-Xbol-F CTACCTGAAGTGCAACTGCAACGCACGAC pSPYNE-PSRI-Xbol-F CTACCTGAAGTGCAACTGCAACGCACGAC pSPYNE-PSRI-Xbol-F CTACCTGAAGTGCAACTGCAACGCACTGCAAGCCAC pSPYNE-PSRI-Xbol-F CTACCTGAAGTGCAACTGCAACGCCAAACTGCAACGCAC pSPYNE-PSRI-Xbol-F CTACCTGAATGCAACTGCAACGCCAAACTGCAACGCCA TSK108-PSRI-Kbol-F CTACCTGAATGCAACTGCAACGCCAC NbPINP1-VIG51-F CGACGACAAGGCCCTGGGTGCAACGCAC NbPINP1-VIG52-F CGACGACAAGACCCTGGTGGGACGTATGGAGTGT AGG01-F AGG01-F CGACGACAAGACCCTGGTGGGACGTATGGAGTGT CUC2-F					
MBP-PINP1-Kool-F MBP-VINP1-Kool-F MBP-VINP1-Kool-F MBP-VINP1-Kool-F CTACCTCACAGATCAAACCTCOTCATCAAACCTA pSPVCE-PINP1-Sall-F CTACCTCACAGATCAAACCTCOTCATCAAACCTA pSPVCE-PINP1-Kopl-R CTACCTCCACGATCCAACCAGCCTTCTTAAACCCACGACTCAAACCTA pSPVCE-PINP1-Kopl-R CTACCTCCACGACTCCAACCTCATCAAACCTA pSPVCE-PINP1-Kopl-R CTACCTCCACGACTCCAACCTCCAACCTCAAACCTA pSPVCE-PINP1-Kopl-R CTACCTCCACGACTCCAACCTCCAACCTCAAACCTA pSPVCE-PINP1-Kopl-R CTACCTCCACGACTCCAACCTCCAACCTCCAACCTCCAACCCACGACCAACCTA pSPVCE-PINP1-Kopl-R CTACCTCCACGACTCCAACCCCACTCCCTCCTCCAACCCACCC	Pull-down assay				
BIFC assay MBP-PINP1-Xhol-R CTACTCGAGTCACAGTCGAGTCTTTAGCCTG pSPYNE-PSR1-Xbal-F CTACTCTGAATGACTTCAAGCTTGT pSPYCE-PINP1-Sall-F CTACGTGGAGTGGAGGTCGATCTTAGT pSPYCE-PINP1-Sall-F CTACGTGGAGTGCGAGCTGCATCGAATGCTTGT pSPYCE-PINP1-Sall-F CTACGTGGAGTGCGAGCTGCATGCAATGCTTGT pENTR-PINP1-Sall-F CTACGTGGAGTGCGAGCTGCATGCAATGCTAA pENTR-PINP1-Sall-F CTACGTGGAGTGCGAGCTGCATGCGAATGCGAGCTGGAG pENTR-PINP1-Xbal-R CTACGTGGAGTGCGAGCTGCAAGCTGCAA pENTR-PINP1-Xbal-R CTACGTGGAGTGCGAGCTGGAGGGAG TSK108-PSR1-Kbal-R CTACGTGGAGGAGTGGAAGCTGCAAGCTGGAGGGAG NDPINP1-VIGS1-R GAGGAGAAGAGCCCTGGTGGAGTATACCAGGAG NDPINP1-VIGS1-R GAGGAGAAGAGCCCTGGGAGGATATCCAGGAG NDPINP1-VIGS1-R GAGGAGAAGAGCCCTGGGAGGAGA NDPINP1-VIGS2-R GAGGAGAAGAGCCCTGGGAGGAGA AGO1-R CTACCAGGAGAAGAGCCCTGGGAGGAG CCC2-F CTTCTCCGCTTGGGAGGACTA CCC2-F CTTCTCCGCTTGGGAGGCCT CCC2-F CTTCCGGAGTGGAGGAGCAAT CCC2-F CTTCCGGAGTGGAGGAGCAAT CCC2-F CTTCCGGAGTGGAGGAGCAA SCL6-R CTGGAGGAGAGAGCCT CCC2-F CTTCCGGAGTGGGAGCT SCL6-R CTGGAGGCAGAGGAGCA SCL6-R CTGGAGGCAGGAGGAGCA SCL6-R CTGGAGGGAGGAGCT SCL6-R CTGGAGGGAGGAGCT SCL6-R CTGGAGGGAGGAGCT SCL6-R CTGGAGGGAGGAGCT SCL6-R CTGGAGGGAGGAGCA SCL6-R CTGGAGGGAGGAGCT SCL6-R CTGGAGGGAGCTGGAGGAG SCL6-R CTGGAGGAGGAGCT SCL6-R CTGGAGGAGGAGCT SCL6-R CTGGAGGAGGAGCT SCL6-R CTGGAGGAGGAGCT SCL6-R CTGGGGCTGGTTGGGAGGCT SCL6-R CTGGGGCTGGTTGGGAGGCT SCL6-R CTGGGCGGGTGTGTGGAGGGGG SCL6-R CTGGGGCGGGTGTGTGGAGGGGAG SCL6-R CTGGGGCTGGTTGGGGAGGAG ATGGGGGGGGGGGGGGGGGGGGGG					
BiFC assay pSPYNE-PSR1-KpnI-R CTACGTAGATACGTAGACGTCGCGCGG pSPYCE-PINP1-Salt-KpnI-R CTACGTGGACTGGGGGTGATCGATCCAAACTA pSPYCE-PINP1-KpnI-R CTACGTGGACTGGGGGTGATCGATCCAAACTA pSPYCE-PINP1-KpnI-R CTACGTGGACTGGGGGTGATCGATCCAAACTA pSPYCE-PINP1-KpnI-R CTACGTGGACTGGGGGTGATCGATCCAAACTA pENTR-PINP1-Khol-R CTACGTGGACTGGTGGATCGATCCAAACTA pENTR-PINP1-Khol-R CTACGTGGACTGGTGGATCGATCCAAACTA TSK 108-PSR1-kcoR1-R CTACGTGGACTGGTGGACGCACCCC VIGS assay NpPINP1-VIG51-R CGACGACAAGACGTGCACCACCCCC NbPINP1-VIG51-R GGACGACGAGACGCCTGGGACGTATGGACGACT QCC-F CGACGACGAGACGCCTGGGACGACTACCCCGGGTGGGCGGATTGGACGACT QCC-F CGACGACGACGCCCTGGGACGACTCC CUC2-F CGACGACGACGCCCTGGGACGACCCC CUC2-F CGACGACGACGCCCTGGACGACGCC CUC2-F CGACGACGACGCCCTGGACGACGCC CUC2-F CGACGACGACGCCCTGGACGACGCC CUC2-F CGACGACGACGCCCTGGACGACGCC CUC2-F CGACGACGACGCCCTGGACGGACGCC CUC2-F CGACGACGACGCCCTGGACGGACGCC CUC2-F CGACGACGACGCCC CUC2-F CGACGACGACGCCCTGGACGGACGCC CUC2-F CGACGACGACGCCCTGGACGGACGCC CUC2-F CGACGACGACGCCC SCL6-F A CGCAAGACGACGCC CUC2-F CGCCCGCCCCCCCCCCCCC SCL6-F A CGCAAGACGACGCCC CUC2-F CGCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC					
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Co-IP assay Co-IP assay Co-IP assay Co-IP assay PENTR-PINPI-SaII-F CO-IP CO-IP assay PENTR-PINPI-SAII-F CO-IP CO-					
Co-IP assaypENTR-PINP1-Sail-FCTACCTCCAACTGCGGTTCATCCATCAACCTGpENTR-PINP1-NoI-RCTACCTCGAGTGCAGTCCAACCTGCTGGGGGGGGGGGGG		•			
pENTR-INPI-Xbol-RCTACCTCGAGTGCATCCTAGCCGACGGATSK108-PSR1-EcoRI-FCTACGAATCATGTTCTAGCCAGGGCTVIGS assayNbPINP1-VIGS1-FCGACGACAGAGCCCTTGGACGACTTATCAGCACGGANbPINP1-VIGS1-RGGACGACAGAGCCCTTGGACGATTATCAGCAGCGAGD1-RCGACGACAGAGCCCTTGGACGATTATCAGCGACGACTATCGACGACGACTCUC2-RTTGGCCCGCGAGAGCATCUC2-RCCACGACAGGACGACTGCPHV-FCGAGGCAGCAGCAGCAGCACTCUC2-RTCGCAGCAGCAGCAGCACTCUC2-RTCGCAGCAGCAGCAGCACTCUC2-RTCGCAGCAGCAGCAGCACTCUC2-RCCGCAGGCAGCAGCACTCUC2-RCCGCAGGCAGCAGCACTCUC2-RTCGCAGCAGCAGCACCGPHV-RTGGGCACCAGCAGCAGCAGCSCL6-FACTCGAGCAGCCGCACCTSCL6-FCCTCCAGCACCGCAGCAGCAGCSPL10-FTGGGCACCAGCAGCAGCGGACTTCTTTTATGAGG2790-FCCGCTCAGGCAACCCGCACTGGAAGG2790-FCCGCTCAGCAGCAGCAGCAGGCGAGCAGCGGAGGAGGAGGAGGAG	Co-IP assay				
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ViGS assayTSK108-PSR1-XbaI-RCTACTCTAGATCATTGTTGTAGCCAGCCTNDPINP1-ViGS1-RCGAGGAAGAGCCTTGGGAGCTATTGTAGCGACCANDPINP1-ViGS2-RCGAGGAAGAGCCCTGTGGCAGCTATGTAGCGACCAqRT-PCRAGO1-RCGCCGCGGAGGAGATAGO1-RCGCCGCCGTGTGGCAGCTATGTGGAGCACCCUC2-FTTTCCCTGTTGGTTCGTCUC2-FCCGCAGAGAGCACCPHV-FCAGGGAGAGAGCCCTSCL6-FCTGCAGCGGAGCACCSCL6-FCTGCAGCGGCAGCCGCCGCGGAGCACCSPL10-FTGGGGTTGCAGCGACCGGAGCACCSPL10-FCGGGGGGGAGCACCGGAGCACCGGAGCACCSPL10-FCGGGGGGGGAGCACCGGAGCGCCSPL10-FCGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG		•			
VIGS assayNbPINP1-VIGS1-FCGACCACAAGACCCTGCTCCATCTTCTGGAGTTCNbPINP1-VIGS2-FCGACGACAAGACCCTGGTGGGACTATCTATCACGACGANbPINP1-VIGS2-RCGACGACAGACCCTTGGAGATTTTGGGCATTqRT-PCRAGO1-FTGGACCACGCAGAGACCCTAGO1-RCTCCATTCCGGTGGAGATTCAGCATCUC2-FTCTCATATCCGTGGAGATGCAPHV-FCGAGGACAGCCCCAGAGACGCSCL6-FACTCCAAGCCCCAGAGACGGSCL6-FCGACAGACACCCTCAAGCASCL6-RGATGATGCTGACGAGAGCGSCL6-RGATGATGCTGACGAGAGGGSPL10-RGATGATGCAGCAGCGGAGGAt4G27990-FCGGCAGGTGCTGAGACAGGAt4G27990-FGGGCCTGGTTCAAGCACCAGTGAAt1G12775-FGTTTTTCTGCGGAGAGAt1G12775-FGGTGGCTGGTTCAAGAGGGAGAT1G12775-FGGTGGCCTGGTTCAAGAGGGAGAt1G12775-FGGGGCGGGTTGATGAACACAAt1G12775-FGGTGGCCTGGTTCAAGAGGGAGALTG12775-FGGTGGCCTGGTTCAAGAGGGAGALTG12775-FGGTGGCCTGGTTCAAGAGGGAGALTG12775-FGGTGGCCTGGTTCAAGAGGGAGALTG12775-FGGTGGCCTGGTTCAAGAGGGAGALTG12775-FGGTGGCCTGGTTCAAGAGGAGAGALTG12775-FGGGGCCTGGTTCAAGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGG					
NDFINP1-VIG51-R GAGGAGAGACCCTTGGAGACTATTATCACGACGA NDFINP1-VIG52-R GAGGAGAACGCCTTGGAGATTTTTGGCACTA GG1-R GAGAACGCCCTGGGAGACAAT AG01-F TGGACACCCCGGAAGACAT CUC2-F TTTTCCTCGTTTCGTTTCA CUC2-R TCCAATACGGTGGAACGACT CUC2-R TCCAATACGGTCACAGTCA PHV-R GAGGATTCAGGGACCTCA SCL6-F ACTGACAGCCCCCAACGA PHV-R GAGGATTCAGGGACCT SCL6-F CCTCAGCAACCCCAACGA SPL10-F CCGTCAGGCAACCGCA SPL10-F CCGTCAGCAAACG SPL10-F CCGTCAGGCAACCGCA SPL10-F CCGTCAGGCAACCGCA SPL10-F CCGTCAGGCAACCGCA SPL10-F CCGTCAGGCAACCGCACTTTTTATG AdG27990-F CCGTCAGGCAACCGCACTTTTTATG AtdG27990-F CCGTCAGGCAACCGCACTTTTTATG AtdG27990-F CCGTCAGCAAACGCACACAC AtdG27990-F CCGTCAGCAACGCGACTTTTTATG AtdG27990-F CCGTCAGCAACCGCACTTTTTATG AtdG27990-F CCGTCAGCAACCGCACTTTTTATG AtdG27990-F CCGTCAGCAACCGCACTTTTTATG AtdG27990-F CCGTCAGCAACCGCACTTTTTATG AtdG27990-F CCGTCAGCACCACACACAC AtdG27990-F CCGTCAGCACCACACACAC AtdG27990-F CCGTCAGCACCACACACCGCCTT NDFINP1a-F CCGGCTCGTCCACCACACACGC ARF3-F GCGCGCCGTCGCACCCACCACAC AtdG27990-F CCGTCAGCACCACACCGCCTT NDFINP1a-F CCGGCTGGTCACCGCCTT NDFINP1a-F CCGGCCTGGTCAAATCGAG ATG319-F CCGGCCGCGCCGCCGCCGCCGCCT NDFINP1a-F CCGGCCATCCACTGCGCCTT NDFINP1a-F CCGGCCTGTCACCGGCCTT NDFINP1a-F CCGGCCATCACCGCCTT NDFINP1a-F CCGGCCATCACCGCCTG NDFINP1-A NDFINP1-AF CCGGCCATCACCGCCTG NDFINP1-A NDFINP1-AF CCGGCCATCACCGCCTG NDFINP1-A NDFINP1-AF NDFINP1-A NDFINP1-AF NDFINP1-A NDFINP1-A NDFINP1-AF NDFINP1-A ND	VIGS assay				
qRT-PCRNbPINP1-VIG52-RGAGGAGAAAGAGCCCTTGGAGAACATTTTGGGCATTAGO1-FTGGACCACCCCAGGAGACATAGO1-RCTCAATACGCTGAAAGCGACTCUC2-FTTTTCCTCGTTGTAAGTCAPHV-RCAGGCTACAGGACCTSCL6-RCATCAAGCCACCTCAAGGACSCL6-RCATCAAGCCACCTCACAGAACGSCL6-RCATCAAGCCACCTCACAGAACGSL10-FCGGTACGAGAACGCCCACATGAAAt4G27990-FCGGTACCGAGATTCACCGCAATGCAAt4G27990-FCGGTACCGAGATTCACCGGCATAt4G27990-FCGGTACCGAGAATGCACCGCAAAt1G12775-RATGAACGGGTGTATGAAACACARF3-RCGGAGAGGGGTGATGATCATCANbPINP1a/b-FCTGGTATCGCAATGGAANbPINP1a/b-FCTGGTATGCACAATGGAGANbPINP1a/b-FCTGGTTGTCCCAATGGAGANbPINP1a-FCTGGCTGTCCAATGGAGAGANbPINP1b-FTTTCTCTCCGGGTTAGGTCGAGAGANbPINP1b-FTTTCTCTCCGAGGATGGATCAATGANbPINP1b-FTTTCTCCCCATGGACTCAANbPINP1b-FTTTCTCCCCAGGATCAATGAGAGANbPINP1b-FTTCTCTCCCAGGATCAATGAGAGAGANbPINP1b-FTTCTCTCCCAGGATCACTACAGANbPINP1b-FTTCTCTCCCAGGATCAGAGAGAAACATAGATGATGATGATGATGATGATGATGATGATGATGATG	2	NbPINP1-VIGS1-R	GAGGAGAAGAGCCCTTGGAACGATTATCACGACGA		
qRT-PCRAGO1-FTGGACCACCGCAGAGACAATAGO1-RCATCATACGCTGGAAGACGACTAGO1-RCATCATACGCTGGAAGACGACTCUC2-RTTTCCTCGTTTGTTTCAACUC2-RTCCAAAATCAGTCAAGTCCAPHV-FCAAGCTTACAGGACTCCSCL6-FACTCAAGACACCTCAAGCASCL6-RGATGATCACACAAGTCGAAGCGASPL10-FTGGACCAACCGGACTTTTTTATGAt4627990-FCCGGCAGGTATCAAGAAGCCTACACAAATAt4627990-FCCGGCAGGTATCAAAAGCAACACACAAAAt41G12775-RGCTTTTTCTATGGGAAGAt1G12775-RGCTGCCTGGTTATGTCCARF3-FGGTGGCCTGGTTATGTCCNbPINP1a/b-FAGGACGCGAACCAACAANbPINP1a/b-FTTTCTGTCCGGAGAGAANbPINP1a/b-FTTTCTGTCCGAGGATGAAAANbPINP1a/b-FTTTCTGTCCGAGGAGCATTANbPINP1a/b-FTTTCTGTCCGAGGAGACACTANbPINP1a/b-FTTTCTGTCCGAGGAGACACCAANbPINP1a/b-FTTTCTGTCCGAGGAGACACTACANbPINP1a/b-FTTTCTGTCCGAGGAGACACTACANbPINP1a/b-FTTTCTGTCCGAGGAGACTGAANbPINP1a/b-FTTTCTGTCCGAGGAGACTGAANbPINP1a/B-RCGACTGCCCATGAGACACTACANbPINP1b-RCGTCTCTGTTAAGAACACTACNbPINP1b-RCGTCTCGTGGAGGATTACGACAGAACTACACNbPINP1b-FTTTCTGTCGGAGACTGCAACTGANbB1S-RNA-FTGACGCACTCGGAACTGGAACTGCAACGAACACTACTGANbB1S-RNA-FTGACGCACTCGGACTTGCGACGGACCNbB1S-RNA-FTGACGGCACACGGAACACTACTGAACACTGANbB1S-RNA-FTGACGGCACCGGACCGGACCCNbB1S-RNA-FTGACGCACCGGCCCCCTGATACGACGACGAACTTACTGACACGCACG		NbPINP1-VIGS2-F	CGACGACAAGACCCTCGTGTGGCAGCTATGAGTGT		
AGO1-R CATCATACGCTGGAAGACGACT CUC2-F TTTTCCTCGTTTGGTTTGTT CUC2-R TCCAAATACAGTCAAGTCA PHV-F CAAGGCTACAGGAACTGC PHV-F CAAGGCTACAGGAACTGC PHV-R TGAGCTACAGGAACTGC SCL6-R CTAAGACATCCCAAGCAACG SCL6-R GATAGATGCTCACAGATGGA SPL10-F TGAGCAACGCCTACCAGATGGA SPL10-F CGCGACGGCTACTCAGGAACG SPL10-F CGCGACGGCTACTCAGGAG SPL10-R GATGATGCCACCCTACTTTTTG At4G27990-F CCGTCAGGTATGAAGTCAACA At1G12775-F GCTTTTTCTACTATGGGAAG At1G12775-F GCGTTTTTTACGCA AAF3-F GGTGGCCTGGTTCAAATGGAG AAF3-F GGTGGCCTGGTTCAAATGGAG AAF3-F GGGGACGGGTGATATGGAGAG AAF3-R CGGAAGAGGGTGATAATGGAG AAF3-R CGGAAGAGGGTGATAATGGAG AAF3-R CGGAAGAGGGTGATAATGGAG AAF3-R CGGAAGAGGGTGATAATGGAG AAF3-R CGGAAGAGGGTGATAATGGAG AAF3-R CGGAAGAGGGTGATAATGGAG AAF3-R CGGAAGAGGGTGATGATACC NbPINP1a/b-F AGGGACTGTTCACTTTCTCT NbPINP1a/b-F CTCGGTATGACCAGAAGAG NbPINP1a/b-R CGAACCCGGCTTT NbPINP1b-F CTTTCTGTCCCATGGAGAGA NbPINP1b-R CGGACTGCTCCAGGAGAGG NbPINP1b-R CGGACTCGTCCCATGGAGAGAG NbPINP1b-R CGGACTCTCCCATGGAGAGAG NbPINP1b-R CGGACTCTCCCATGGAGATGAG NbPINP1b-R CGGACTCTCCCATGAGGCATT Nb185-rRNA-F TGACGGAGAGTGTCG N185-rRNA-F TGACGGAGAGTCTCGTTA Nb185-rRNA-F TGACGGAGGAGTCTCGTTA Nb185-rRNA-F CCCCCCATGGAGACTACTGCA Nb91N91b-R CCGCCCATGGAGACTAGGCTG AUBQ10-R AAACTCGTCTCGTTAACAGGAG AUBQ10-R AAACTGCCTTGCATGAGCGAACTAGGTG AUBQ10-R AAACTGCCTTGCATGGGAACTAGGTG DCL1-R AAACTGCCTTCGATGGGAACTAGCTG PINP1-RT-R TGCCGCATGGGAACTAGCTG PINP1-RT-R TGCCGATGGGAACTAGCTG PINP1-RT-R TGCCCCATTGGAGAACTAGT DCL1-R AAACTGCCTTGCATGGGAACTAGCTG PINP1-RT-R TGCCCCATTGGGAGAACTAGT PINP1-RT-R TGCCGCCCTTTACGAGAGCTG PINP1-RT-R TGGCGCCATTCGCGAAGAGGAGTG PINP1-RT-R TGCCCCATTGGAGAACTAGTGT PINP1-RT-R TGCCCCATTGGAGAACTAGTGT PINP1-RT-R TGCCCCATTCGCGGAACTAGCTG PINP1-RT-R CGCGCCCATTCCAGGACCTGCT PINP1-RT-R TGCCCCATTCGCAGAACTAGTGGA PINP1-RT-R TGCCCCATTCGCAGGACCTGCT PINP1-RT-R TGCCCCATTCGCGAACTAGTGGA PINP1-RT-R CGCCCCTTCGCTGGAACTAGTGGA PINP1-RT-R CGCCCTTCGATGGCAGGGTGC PINP1-RT-R CGCCCCTTCGATTGGCAACTGCGAACTAGTGGAA PINP1-RT-R CGCCCCTTCGATTGGAACTAGTGGAA PINP1-RT-R CGCCCTTCGATTGGAACTAGTGGAACTAGTGGAACTAG		NbPINP1-VIGS2-R	GAGGAGAAGAGCCCTTGGAGAATTTTTGGGCATT		
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CUC2-RTCCAAATACAGTCAAGTCCAPHV-FCAAGGTACAGGAACTCCPHV-FCAAGGTACAGGAACTCCSCL6-FACTCAAGACAACCTCAAGCASCL6-RGATGATGCACCCACATGGASPL10-FTGAGACAAAGCCTAACGAAGGASPL10-FGATGATGCAACCCGACTTTTTATGAt4G27990-FCCGTCAGTAATGAAACCAt4G27990-FCCGTCAGTATGAAACAAAt1G12775-FGCTTTTTCACATATGGGGAAGAt1G12775-FGCTGGGCTGGGTTAATGACAAt1G12775-FGCGGACAGGGTGATGAATGAACAAt1G12775-FGCGGACGGGTCAAAATGGAGARF3-RCGGAAGAGGGTGATGATGATACNbPINP1a/b-FAGGGCCTGGTCCAAATGGAGNbPINP1a/b-FCGGAAGAGGGTGATGATGATACNbPINP1a/b-FCGGAAGAGGGTGGAGGAGNbPINP1a/b-FTTTCTCCCGAGAATGGAGNbPINP1a/b-FCCGGATGACTTCCCGAGGAGGAGNbPINP1a/b-FTTTCTCCGCGTGCGAGGAGGAGNbPINP1b-RCCGTCGTTGCAGGATGAGGAGNbPINP1b-RCCTCCATTGACGTTCTGANbPINP1b-RCCTCCATTGACGTTTATGGGTNb9INS-RNA-FTGACGGAGAATTAGGGTTCGNb9INS-RNA-FTGACGGAGAATTAGGGTTCGNb9INS-RNA-FCATGACGCGATGCAGTTATGAGGAGAANb9INS-RNA-FCATGACGCGATGCAGCATCACTGANb9INS-RNA-FCCTCATGACGAGAACATAGGNb9INS-RNA-FTGACGGAGAACTGCGGAACATAGGNb9INS-RNA-FCCTCATGACGAGGAACATAGGNb9INS-RNA-FCCTCATGACGAGGAACATAGGNb9INS-RNA-FCCTCATGACGAGGAACATAGGNb9INS-RNA-FCCTCATGACGAGGAACATAGGNb9INS-RNA-FCCTCATGACGAGGAACATAGGNb9INS-RNA-FCCTCCATGACGCAGGAACATAGG		AGO1-R	CATCATACGCTGGAAGACGACT		
PHV-FCAAGGCTACAGGAACTGCPHV-RTCAGGCTTACAGCAACGCSCL6-FACTCAAGACACCTCAAGCASCL6-RGATGATGCTCACCAAGCGASPL10-FTCAGACAAGCCTACACAATGGASPL10-RGATGATGCTACAGAACGAt4G27990-FCCGTCACGGAAGCGGAACAAAt4G27990-RTGGGATACAGAAGCGAACAAAt1G12775-FGCTTTTTATGCTCCARF3-FGGTGGCCTGGTTCAAAATGGAGAt1G12775-FGGTGGCCTGGTCAAAATGGAGAt1G12775-FGGTGGCCTGGTCAAAATGGAGAt1G12775-RGGTGGCCTGGTCAAAATGGAGARF3-RCCGAACAGGGTATGATACACANbPINP1a/b-FTGGCGCATCGTTCGTACTGGCGATNbPINP1a/b-RCCGGACGAGCTGTACCGGCTTNbPINP1a/b-RCCAACTCGCTCCAACAGANbPINP1a/b-RCCGACCGGACTGGAGAANbPINP1b-FTTTCTCTCCGAGAATGAGGANbPINP1b-FTTCTCTCCCATGAGCATTNbBINN1b-RCCAACTCGCTTGAATACGGATGAGANbBINN1b-RCCAACTCGCTTGAGGAATAGGGTTGGNbBINN1b-RCCTCCAATGAATCAGGATGAGAANbBINN1b-RCCTCCAATGAACCTGAATAGGAGAANbBINN1b-RCCTCCAATGAACCTGGAAGAAACATAGTNb183-RNA-RCCTCCCCCCATGAGCAGTAACCAGAGAACDCL1-FAAACGCATAACCGGAACCTAGCGAACATAGTDCL1-FAAACGCATAACCGGAACCTAGCGAACATAGTDCL1-FAAACGCATACCGGATTCGGAACATAGTDCL1-FAAACGCATACCGGATTCGCGAADCL1-FCAACGGCTCACTCCGTTAAGGAGAACATAGTDCL1-FCAACGGCTCACTCCGTCACAGCGGTACTGCGAADCL1-FCAACGGCTCACTCCCATTCCACAGGACGAACATAGTDCL1-FCAACGGCTCACTCCCATTCCACAGGAACATAGTDCL1-FCAACGGCTCACTCCC		CUC2-F	TTTTCCTCGTTTCGTTTCTA		
PHV-RTGAGGATTTGAGGACCTSCL6-FACTCAAGCAACCTCAAGCASCL6-RGATAGATGCTCACGAAACGSPL10-FTGAGACAAGCCTACACAGATGGAAt4G27990-FCGCGTAGGAAAGCAACACAAt4G27990-RTGGGATACGAAGTCAACACAAt4G27990-RGGTGGCTGGGTTATGTCCAt4G27990-RGGTGGCTGGGTTATGTCCAt4G27990-RGGGATACGAAGTCAACACAAt4G27990-RGGGATACGAAGTCAACACAAt4G27990-RGGGATACGAAGTCAACACAAt4G27990-RGGGATCGGTTATGTCCAt4G27990-RGGGACTGGCTGGTTATGTCCAt4G27990-RGGGACTGGCTGGTTATGTCCAt4G27990-RGGGACTGGCTGGTTAAGAACACACAAt4G27990-RGGGACTGGCTGGTTAAGAACACACAAt4G27990-RGGGACTGGCTGGTTATGTCCAt1G12775-RGGTGGCCGGTTAAGAGAGACACACACAAt1G12775-RGGGACTGGCTGGTAAGAACACACACAARF3-RCGGAAGAGGGTGATGATACCGAANbPINP1ab-RCGGGACGCCGTTACCGAACACACACACACACACACACACA		CUC2-R	TCCAAATACAGTCAAGTCCA		
SCL6-FACTCAAGACACCTCAAGAASCL6-RGATAGATCCTTCACGAAAGGSPL10-FGATAGATCCAACCGACTGTAACAGASPL10-RGATGATCAAACCCGACTTTTTATGAt4G27990-FCCGTCAGGATACAAACACAt1G12775-FGCTTTTTCTACGAGAAGAt1G12775-RATGAGAGGGGTTAATGTCCARF3-FGGTGGCTGGTTCAAAATGGAGNbPINP1a/b-FAGGACTGGTTCAAAATGGAGNbPINP1a/b-FCGGGACGCTGCTTCCAACTCCNbPINP1a/b-FCCGGCATCACTTTCCTCTNbPINP1a/b-RCCAACTCCGTCTCAAAGAGAGANbPINP1a/b-RCCAACTCCGTCTCAAAGAGAGANbPINP1a-RCCAACTCCGCTTGAAGAGAGANbPINP1a-RCCATCCCATGACGAGAGAGANbPINP1a-RCCATCCCCATGACGAGAGAGANbPINP1a-RCCATCCCCATGAGCAGAGAGANbPINP1a-RCCATCCCCATGAGCAGTCGNbPINP1b-FTTTTCTGTCCCAAGGAGTCGNbPINP1b-FTTTCTGTCCCATGAGCAGTCGNb185-rRNA-RCCTCCCATGAGCATCTACTGANb185-rRNA-RCCTCCCATGAGAATCAGGACGAACATAGTNb185-rRNA-RCCTCCCATGGAGAATCAGCAGTGAtUBQ10-FAAATCTCTTCCTCTTTTAGCAGAGGTGAtUBQ10-RAAAGAGATACAGGAACAGGAACATAGTDCL1-RAAAGGCATAACGGAACGGAACATAGTDCL1-RAAAGCCCTGCGTTTTCCAAGGGTGpremiR319-FTGACCCATGACCGGTCGpremiR319-FTGACCCATGACGAGAGAGAGAGAGAGAGAGAGAGAGAGAG			CAAGGCTACAGGAACTGC		
SCL6-RGATAGATGCTTCACGAACGSPL10-FTGGACAACGCTTCTTAGGASPL10-RGATGATGCAACCGACTTTTTATGAt4G27990-FCCCTCAGGTAATGAACACAt4G27990-RTGGGATACAGAAGTCAACAAAt1G12775-FGCTTTTTCTACTATGGGAAGAt1G12775-RAGGAGGTGGTTCAAAAAGGAGARF3-RCGGAAGAGGGTATGATACANDPINP1a/b-FAGGCACTGTTCACAATGGAGNDPINP1a/b-FAGGCACTGTTCCCCTNDPINP1a/b-FTGCCGATCACTTCCTCTNDPINP1a/b-FTGCCGACCACTCACAGAGANDPINP1a/b-FTGCCGCACCACTCACAGAGANDPINP1b-RCCTGCTATGACCGAGAGAGANDPINP1b-RCGACTCCCCCATGAGCACTCANDPINP1b-RCGACTCCCCCTTANDB1S-RNA-FTGACGGAGAGTACTACGAGAND185-RNA-FTGACGGAGAGTACTACGAGAND185-RNA-FTGACGGAGCAGTACTACGAGAND185-RNA-FTGACGCACGGAGCACTACTGAND185-RNA-FTGACGCACGGAGCACTACTGAND185-RNA-FTGACGCACGGAGCACTACTGAND185-RNA-FTGACGCACGGAGCACTACTGAND185-RNA-RCCTCCCATGGACGAACTACTGAND185-RNA-RCCTCCCATGGACGAACTACTGAND185-RNA-RCCTCCCATGGACGAACTACTGAND10-FAAATCCTCTCCTTTAAGAAGAAtUBQ10-FAAATCCGCTTAACGACGCAACTACTGAAtUBQ10-FAAATGCCCTTCACAGAACGAACTACTACGAADCL1-RAAATGCCCTTCCACGAACGACTGACTPremiR19-FTGCGCGACTCGGTTTACGAGAGGTGPremiR19-FTGCGCGACTCGGTTTACGAGAGGTGPremiR19-FGGACCCATCACACGGTCAPremiR19-FGGACCCCTTCCATCAAAACTTTPremiR163-FCACCGTTCACTGAAAACTTTPrim					
SPL10-FTGAGACAAAGCCTACACAGATGGASPL10-RGATGATGCAACCCGACTTTTTATGAt4G27990-FCCGTCAGGTATGAAACACAt4G27990-RTGGGATACAGAAGTCAACAAAt1G12775-FGCTTTTCTACTATGGGGAAGAt1G12775-RAGGAGGTGGTTCAAAATGGAGARF3-FGGTGGCCTGGTCAAAATGGAGARF3-RCCGAAAGGGGTGATGATGATACNbPINP1a/b-FAGGACTTCTTACCGGGCTTNbPINP1a/b-FCCGGATGACTTCCCTNbPINP1a/b-RCCTGGTTGCAAGCGAGAGAANbPINP1a/b-RCCTGGTTGCAAGCAGAGAANbPINP1b-FTTTTCTGTCCGAGGATGAGANbPINP1b-RCTCCGATGAGCTCCNbPINP1b-RCCTCCAATGAGCATCANb185-rRNA-FGAGCGATCCTCGTTANb185-rRNA-FCAGCGACGATGAACGAGATGAAGANb185-rRNA-FCCTCCAATGAGCATCACTGAGANb185-rRNA-FCCTCCAATGAGCATCACTGAGANb185-rRNA-FCCTCCAATGGACGATCACTGGANb185-rRNA-FCCTCCAATGGACGATCACTGGANb185-rRNA-FCCTCCAATGGACGATCACTGGANb185-rRNA-RCCTCCAATGGACGCTCACTGGANb185-rRNA-RCCTCCAATGGACGCAACTAGTGADCL1-FAATGCCATTCGCACGGAACGAACGAGGAAtUBQ10-FAAATCCTCTTTTCGTTAGGAAGGACGGAACTAGTDCL1-RAAAGGCCATTCACAGGCGTTACGAGAGDCL1-RAAAGGCCATTCACAGGGCGTTACGAGAPremiR19-FTGGCGACTCGGAACTGGAACTGGTPremiR19-FGGACCTATTCACAGGGAGGTGAPremiR19-FCGCGGCCCGCAACTGGAAPremiR167-RCAACGGTCGAACTGCCGAAPrimiR159-FGGACCTTCATCAAAACTTTPrimiR163-FCCTCGTTCATCAAGGGTTGPrimiR163-RCCTTCCTTGAAGAGGTTG <td></td> <td></td> <td></td>					
SPL10-RGATGATGCAACCCGACTTTTTATGAt4G27990-FCCGTCAGGTAATGCAACAAt4G27990-FCCGTCAGGTAACAAAACAAt4G27990-FGCTTTTCTACTATGGGGAAGAt4G27990-FGCTTTTCTACTATGGGGAAGAt1G12775-RATGAGAGTGGGTTAATGTCCARF3-FGGGACGGGGTGATGATGATACARF3-RCGGAAGAGGGTGATGATGATACNbPINP1a/b-FAGGCACTTGTTACCCGGCTTTNbPINP1a/b-RCGAACTCGGTCGCAAGAANbPINP1a/b-RCTAGCTGCGAAGAGAGAANbPINP1a/b-FTTTCTCTCCGAGAGAGAGAANbPINP1b-RCCTCGTTGCAACTCANbPINP1b-FTTTCTCTCCGAGGAGTGGAGNbPINP1b-RCCTCCAATGGACTTGGNb185-rRNA-FGGACCTCGGTTAACTGAANb185-rRNA-FGCACCCGATGAGAGATACTAGAGANb185-rRNA-FCCCCCAATGGACTTACTGAANb185-rRNA-FCCCCCAATGGAGTACTACTGANb185-rRNA-FCCACCGATGGAGTACTACTGAANb185-rRNA-FCCACGGGGATACTACTGAACAGAACGAACATAGTNb185-rRNA-FCCACCGATGGACTACTGAACATAGTNb185-rRNA-FCCACGGGGAACTACATGACAGACGAACATAGTNb185-rRNA-FCCACGGGGAACATACGAGCGGACCTGAACATAGTNb185-rRNA-FCCACGGGGAACATACGAACGAACGAACGAACATAGTND185-rRNA-FCCACGGGGAACATACGAGCGGACCCGGACCCND185-rRNA-FCCACGGGGATACCTGGTATGGAACATAGTND185-rRNA-FCCACGGCATCACGCGCGCCND185-rRNA-RCCCCCATGCCCGTTTACCACGACCGGAACATAGTND185-rRNA-RCCCCCCATGCTCGTCGTTAACGAGCTGND21-RT-RCCACGGCGCTGCCCGTTTACCGCGAACATAGTND21-RT-RCCACGCGCTACTCCCCGTTTACCAGACGAGCTCND21-FAAATCCCTTGCTTGCATCACCGAGACATAGT <td></td> <td></td> <td></td>					
At4627990-FCCGTCAGGTAATGAACACAt4627990-RTGGGATACAGAAGTCAACAAAt1G12775-FGCTTTTTCTACTATGGGGAAGAt1G12775-RATGAGAGTGGGTTATATGTCCARF3-FGGTGGCCTGGTTCAAAATGGAGARF3-RCGGAGAGGGGTGATGATGATACNbPINP1a/b-FAGGACTTGTTACCGGCTTTNbPINP1a/b-RCGACGGATGACACTCANbPINP1a-FCCTGGTATGACGAGAGANbPINP1a-FCCTGGTATGACGAGAGAANbPINP1a-RCAAACTCCGTCTGCAACTCANbPINP1b-RTTTCTGTCCGAGGATGAGAGANbPINP1b-RCGATCTTCCCATTGAGCATTNb185-rRNA-FTGACGAGAGATTAGGGTCGNb185-rRNA-RCCTCCCATGGAGTACTACTGAPINP1-RT-FACAGACTACGACGAGAACATAGGAtUBQ10-FAAATCTCGTCTCTGTTAGCAGCTGAtUBQ10-FAAATCTCGTCCAGGAGAACATAGTDCL1-RAAAGCATAACAGGACGGAACATAGTDCL1-RAAACCCATCAGCCGTTACGAGAGpremiR319-FTGAGCCATTCACAGGTCGTpremiR319-FGGAGCTCCATTCACAGGTCGTpremiR167-RCCACGTCCCATTCACAGGTGATpremiR167-RCACCGTCTCATCGAACATACTpremiR167-RCACCGTCTCATCACAGGTGApri-miR159-FGGACCTCACTCCATCACAGACATACApri-miR163-RCCATGCTTGATGGAACATTATpri-miR163-RCCTTGCTTGATGGAGAGTGApri-miR163-RCCTTGCTTGATGGAGGTTG					
At4G27990-RTGGGATACAGAAGTCAACAAAt1G12775-FGCTTTTTCTACTATGGGGAAGAt1G12775-RATGAGAGTGGGTTAATGTCCARF3-FGGTGGCCTGGTCAAAATGGAGARF3-RCGGAAGAGGGTGATGATGATACNbPINP1a/b-FAGGGACTGGTTACCGGCTTNbPINP1a/b-RCCGGATGACGAAGAANbPINP1a/b-RCCAGACTGGCAACAACNbPINP1a/b-RCCAGACTGCGAAGAANbPINP1a/B-FTTTTCTGTCGAAGGAGNbPINP1a/B-RCAAACTCCGTCGCAACTCANbPINP1b-FTTTTCTGTCCGAGGATGAGAGNbPINP1b-RCGACTTTCCCATTGACACTTNb185-rRNA-RCCTCCAATGACTCCGCTTANb185-rRNA-RCCTCCAATGAGTCTCGGAGNb185-rRNA-RCCTCCCATGAGAGTACTACTGAPINP1-RT-FACATGACCGAATAACGGAACCGGAACAAGTGAtUBQ10-FAAACTCCTTCTCTTTAGCAAGATGATAGGAGTDCL1-FAATGGGAATAACAGGAACGGAACATAGTDCL1-FAATGGCATCACGGATCACTGGApremiR319-FTGACTCCATTCACAGGTCGpremiR319-FTGACGCACTGGAACTGCGAACATAGTpremiR167-FTCTTCTGTTTCATGACAGATAGTpremiR167-FCCTGTGTTCCATCGACAACTGCGAprimiR163-FGCACTCACTCACAAACTTTprimiR163-FGCACTGGTCTTCATGAGGAACTGGAAprimiR163-FGCACTGCGTTTCCATCGTCAprimiR163-RCCACGTTCCATCGTGAACTTTprimiR163-RCCACGTTCCATGAGAGGTGGAACTTGprimiR163-RCCACGTTCCATGAGAGGTGGAACTTGprimiR163-RCCACGTTCCATGAGAGGTGGAACTTGprimiR163-RCCACGTCTCCTGTATAGGAGGTGGAACTTGprimiR163-RCCACGTCTCCTGTATAGGAGGTGGAACTTGprimiR163-RCCACGTCTCCTGTATAGGAGGTGGAACTTG <td></td> <td></td> <td></td>					
At1G12775-FGCTTTTCTACTATGGGAAGAt1G12775-RATGAGAGTGGTTATGTCCARF3-FGGTGGCCTGGTTCAAAATGGAGARF3-RCGGAAGGGGGTGATGATGACNbPINP1a/b-FAGGGACTTGTACGGCTTTNbPINP1a/b-RTAGCCGCATCACTTCCTCTNbPINP1a-FCCTGGTATGACCGAGAGAANbPINP1a-RCAAACTCCGTCTGCAACTCANbPINP1b-RCGATCTTCCCATGGAGGGGNbPINP1b-RCGCATCTCCCATGGAGCGGACNbPINP1b-RCGCCCCATGGATACTACTGANb185-rRNA-FTGACGGAGATTACGAGCTGNb185-rRNA-RCCTCCCATGGATACTACTGACNb185-rRNA-RCCTCCCATGGAGATACTACTGAGAPINP1-RT-FACATGACCGATGGATACTACTGAGAGAtUBQ10-FAAATCTCGTCTGTTATGCTTAAGAAGAtUBQ10-RAAAGGATAACAGGAACATAGTDCL1-FAATGGGCATCAGCCGTTCCATGGAGDCL1-FAATGGCCATCAGCGGTCCpremiR319-FTGAGCCATCAGCGGTCCpremiR319-RTGGCGACTCAGCGGTCpremiR319-RTGGCGACTCGGCATTGGGATpremiR167-FTGTTGTTTCATGACGATGGTpremiR167-FGGAGCTCTACTCCATGGCAprimiR159-FGGAGCTCTACTCCATGGAAprimiR167-RCACGGTGAAACTGGAAprimiR167-RCCACGGTCAATCCGGAAprimiR167-RCCACGGTCAACTGCGAAprimiR163-RCCATAGGTTGAACTGGGAprimiR163-RCCATGGTTGAACAGAGGTTG					
At1G12775-RATGAGAGTGGGTTTATGTCCARF3-FGGTGGCCTGGTTCAAAATGGAGARF3-RCGGAAGAGGGTATGATGATACNbPINP1a/b-RAGGACTGTTACGGCTTNbPINP1a/b-RTAGCCGCATCACTTTCCTCTNbPINP1a-FCCTGGTATGACCGAGAGAGAANbPINP1b-FTTTTCTGTCGAGGATGGAGNbPINP1b-RCGATCTTCCATGACCACTTNb185-rRNA-FTGACGGACACTACTACTACNb185-rRNA-RCCTCCCATGGATCTCGTAPINP1-RT-FACATGACCGATGATACTACAGAGAtUBQ10-FAAATCTCGTCTTGCTAAGAGAGAGAGAGAGAGAGAGAGAG					
ARF3-FGGTGGCTGGTTCAAAATGGAGARF3-RCGGAAGAGGGTGATGATGATACNbPINP1a/b-FAGGCACTGTTACCGGCTTTNbPINP1a/b-RTAGCCGCACCATTCCTCTNbPINP1a/b-RCCTGGTATGACGAGAGAANbPINP1a-RCAACTCCGTCGCAACTCANbPINP1b-FTTTTCTGTCCGAGGATGGAGNbPINP1b-RCGATCTTCCCATTGAGCATTNbPINP1b-RCGATCTTCCCATTGAGCATTNbPINP1b-RCGATCTTCCCATGAGCATTNbPINP1b-RCGATCTTCCCATGAGCATTNbPINP1-RT-FACATGACGATGATCATCGAPINP1-RT-FACATGACGATGAACATACGACCGPINP1-RT-RTCTACTGGAACATCATACGACCGGPINP1-RT-RATCTCGTCTGTTATGCTTAAGAAGAtUBQ10-FAAATCTCGTCTGTTATGCTTAAGAAGAtUBQ10-RAAAGGGAATAACGGAACCGAAACATAGTDCL1-RAAATCGCCATTCACAGGACCGAAACATAGTDCL1-RAAATCTCTTGCATGAGGCGCGTCpremiR319-FTGGCGACTCGCTATTGGATpremiR319-RTGCCGACTCGCATTACGAGApremiR167-FGGTGTGTTCATGACGATGGTpremiR167-FGGACCTCACTCCATCGCAApri-miR163-RCCACGTTCACACAAACTTTpri-miR163-RCCATGTCTCCATCGACAACTTTpri-miR163-RCCACGTCTGCATGAACTTG					
ARF3-RCGGAAGAGGGTGATGATGATACNbPINP1a/b-FAGGGACTTGTTACCGGCTTNbPINP1a/b-RTAGCCGCATCACTTCCTCTNbPINP1a-FCCTGGTATGACCGAGAGAANbPINP1a-RCAAACTCCGTCGCAAGGAGNbPINP1b-FTTTCTGTCCGAGGATGGAGNbPINP1b-RCGATCTTCCCATGAGCATTNb185-rRNA-FGGATCTCCCATGGAGGATCAGCAGNb185-rRNA-FCCTCCAATGGATCCTCGTTANb185-rRNA-RCCTCCCATGGAGGATACGAGCTGNb185-rRNA-RCCTCCCATGGAGGATACGAGCTGNb185-rRNA-RCCTCCCATGGAGGATACGAGCTGNb185-rRNA-RCCTCCCATGGAGGATACGAGCTGNb185-rRNA-RCCTCCCATGGAAGATACGGAAACATAGANb185-rRNA-RCCTCCCCATGGAGGATACCAGGCTGNb185-rRNA-RCCTCCCATGGAGGATACCAGACTGANb185-rRNA-RCCTCCCCATGGAAGATACGGAAACATAGAGNb185-rRNA-RCCTCCCCATGGAGGATACCAGACTGANb185-rRNA-RCCTCCCCATGGAGAGATACGGAAACATAGANb185-rRNA-RCCTCCCCATGGAGAGATACGGAACATAGAGNb185-rRNA-RCCTCCCCATGGAGAGATACGGAACATAGAGANb185-rRNA-RCCTCCCCCATGGAGAGACATAGAGAGAGATAGAGAACATAGAANb185-rRNA-RCCTCCCCATGGAGAACATAGAGAGAGAGAGAGAGAGAGAG					
NbPINP1a/b-RTAGCCGCATCACTTTCCTCTNbPINP1a-FCCTGGTATGACCGAGAAGAANbPINP1a-RCAAACTCCGTCTGCAACTCANbPINP1b-FTTTTCTGTCCGAGGATGGAGNbPINP1b-FTTTTCTGTCCGAGGATGAGANbPINP1b-RCGATCTTCCCATTGAGCATTNb185-rRNA-FTGACGGAGAGTACTACTGAPINP1-RT-FACATGACCGATGGAGTACTACTGAPINP1-RT-RTCTACTGGAAGAGTGATACGAGCTGAtUBQ10-FAAACTCCGTTCTGTTATGCTTAAGAAGAtUBQ10-FAAACTCCGTTCTGTTACGAGAGDCL1-FAAAGGGCATCAGCGGTCCpremiR319-FTGAGTCCATTCACAGGTCGTpremiR319-FTGAGTCCATTCACAGGTCGTpremiR319-FGCGCACTCGGTATTTGGATpremiR167-RCAACGGGTGAACTACGGAAprimiR159-FGGAGCTCTACTCCATCGCAAprimiR159-FGGAGCTCTACTCCATCGTCAprimiR159-FGGAGCTCTACTTCCATCGTCAprimiR163-FCCATAGGTCTTGATTGGTGGAprimiR163-RCGTGTCGTTGATAGAGAGGTTG		ARF3-R			
NbPINP1a-FCCTGGTATGACCGAGAAGAANbPINP1a-RCAAACTCCGTCTGCAACTCANbPINP1b-FTTTTCTGTCCGAGGATGAGNbPINP1b-RCGATCTTCCCATTGAGCATTNb185-rRNA-FTGACGGAGATTAGGGTTCGNb185-rRNA-RCCTCCAATGGATCACTGAAPINP1-RT-FACATGACGATGATACGAGCTGAtUBQ10-FAAATCTCGTCTGTTATGCTTAAGAAGAtUBQ10-RAAAACCGGACGAGCGGAACATAGTDCL1-FAAAGGCATCACGGGTGCCpremiR319-FTGACGCACCGGTCCpremiR319-FTGACGCACTCGGTATTGGATpremiR167-FTGTGTGTTTCATGACGATGGTpremiR167-FGGAGCTCTACTGCGAApri-miR159-FGGAGCTCTACTCCATCGTCApri-miR159-RCCACGGTGCAACTTCGTCApri-miR163-FGCATAGGTCTTGATTGGTGGApri-miR163-RCGTTGTCGTTGATGGTGGAACTTG		NbPINP1a/b-F	AGGGACTTGTTACCGGCTTT		
NbPINP1a-RCAAACTCCGTCTGCAACTCANbPINP1b-FTTTTCTGTCCGAGGATGGAGNbPINP1b-RCGATCTTCCCATTGAGCATTNb185-rRNA-FTGACGGAGAATTAGGGTTCGNb185-rRNA-RCCTCCAATGGATCCTCGTTAPINP1-RT-FACATGACCGATGGAGTACTACTGAPINP1-RT-RTCTACTGGAAGATGATACGAGCTGAtUBQ10-FAAATCTCGTCTCTTTATGCTTAAGAAGAtUBQ10-RAAAGGGATAACAGGAACGAAACATAGTDCL1-FAAATCTCTTTGCATGAGCGGTCCpremiR319-FTGAGTCCATTCACAGGTCGpremiR319-RTGGCGACTCGGTATTGGATpremiR167-FTGTTGTGTTTCATGACGATGGTprimiR167-RCAACGGGTGAAACTGCGAAprimiR159-RCCACGTTCCATCACAGACGTAprimiR163-FGCATAGGTCTTGATGGTGGAprimiR163-RCGTTGTCGTTGATGGTGGA		NbPINP1a/b-R	TAGCCGCATCACTTTCCTCT		
NbPINP1b-FTTTTCTGTCCGAGGATGGAGNbPINP1b-RCGATCTTCCCATTGAGCATTNb185-rRNA-FTGACGGAGATTAGGGTTCGNb185-rRNA-RCCTCCAATGGATCCTCGTTAPINP1-RT-FACATGACCGATGGAGTACTACTGAPINP1-RT-RTCTACTGGAAGATGATACGAGCTGAtUBQ10-FAAATCTCGTCTTGTTATGCTTAAGAAGAtUBQ10-RAAAGGGATAACAGGAACCATAGTDCL1-FAAATGGGCATCAGCGGTTACGAGADCL1-RCGGCACTCAGCGGTTATGGATpremiR319-FTGAGTCCATTCACAGGTCGTpremiR319-RTGGCGACTCGGTATTGGATpremiR167-FGGAGCTCTACTCCATGACGAGApremiR167-RCAACGGGTGAAACTGCGAAprimiR159-FGGAGCTCTACTCCATGGTGAprimiR159-FGGAGCTCTACTCCATGGTGAprimiR159-RCCACGTTCTCATCAAACTTTprimiR163-RCGTTGTCGTGAAGAGGTTG		NbPINP1a-F	CCTGGTATGACCGAGAAGAA		
NbPINP1b-RCGATCTTCCCATTGAGCATTNb18S-rRNA-FTGACGGAGAATTAGGGTTCGNb18S-rRNA-RCCTCCAATGGATCCTCGTTAPINP1-RT-FACATGACCGATGGAGTACTACTGAPINP1-RT-RTCTACTGGAAGATGATACGAGCTGAtUBQ10-FAAATCTCGTCTCTGTTATGCTTAAGAAGAtUBQ10-RAAAGGGATAACAGGAACGGAAACATAGTDCL1-FAATGGGCATCAGCCGTTTACGAGAGpremiR319-FTGAGTCCATTCACAGGTCGTpremiR319-RTGGCGACTCGGTATTTGGATpremiR167-FTGTTGTGTTTCATGACGATGGTpremiR167-RCAACGGGTGAAACTGCGAApri-miR159-FGGAGCTCTACTTCCATCGTCApri-miR163-FGCATAGGTCTTGATTGGTGGApri-miR163-RCGTTGTCGTTGAAGAGGTTG		NbPINP1a-R	CAAACTCCGTCTGCAACTCA		
Nb18S-rRNA-FTGACGGAGAATTAGGGTTCGNb18S-rRNA-RCCTCCAATGGATCCTCGTTAPINP1-RT-FACATGACCGATGGAGTACTACTGAPINP1-RT-RTCTACTGGAAGATGATACGAGCTGAtUBQ10-FAAATCTCGTCTCTGTTATGCTTAAGAAGAtUBQ10-RAAAGGGATCAGCGGAACCAGGAAACATAGTDCL1-FAATGGGCATCAGCCGTTTACGAGADCL1-RAAATCTCTTTGCATGAGCCGGTCCpremiR319-FTGAGTCCATTCACAGGTCGTpremiR319-RTGGCGACTCGGTATTTGGATpremiR167-FTGTTGTGTTTCATGACGATGGTpremiR167-RCAACGGGTGAAACTGCGAApri-miR159-FGGAGCTCTACTTCCATCGTCApri-miR159-RCCACGTTCTCATGAAACTTTpri-miR163-FGCATAGGTCTTGATGGTGGApri-miR163-RCGTTGTCGTTGAAGAGGTTG					
Nb18S-rRNA-RCCTCCAATGGATCCTCGTTAPINP1-RT-FACATGACCGATGGAGTACTACTGAPINP1-RT-RTCTACTGGAAGATGATACGAGCTGAtUBQ10-FAAATCTCGTCTCTGTTATGCTTAAGAAGAtUBQ10-RAAAGGGATCAGCGGAACCATAGTDCL1-FAATGGGCATCAGCCGTTTACGAGADCL1-RAAATCTCTTTGCATGAGGCCGGTCCpremiR319-FTGAGTCCATTCACAGGTCGTpremiR319-RTGGCGACTCGGTATTTGGATpremiR167-FTGTTGTGTTTCATGACGATGGTpremiR167-RCAACGGGTGAAACTGCGAApri-miR159-FGGAGCTCTACTTCCATCGTCApri-miR159-RCCACGTTCTCATGAAACTTTpri-miR163-FGCATAGGTCTTGATGGTGGApri-miR163-RCGTTGTCGTTGAAGAGGTTG					
PINP1-RT-FACATGACCGATGGAGTACTACTGAPINP1-RT-RTCTACTGGAAGATGATACGAGCTGAtUBQ10-FAAATCTCGTCTCTGTTATGCTTAAGAAGAtUBQ10-RAAAGGGATAACAGGAACGGAAACATAGTDCL1-FAATGGGCATCAGCCGTTTACGAGADCL1-RAAATCTCTTTGCATGAGGCCGGTCCpremiR319-FTGAGTCCATTCACAGGTCGTpremiR319-RTGGCGACTCGGTATTTGGATpremiR167-FTGTTGTGTTTCATGACGATGGTpremiR167-RCAACGGGTGAAACTGCGAApri-miR159-FGGAGCTCTACTTCCATCGTCApri-miR159-RCCACGTTCTCATGAAACTTTpri-miR163-FGCATAGGTCTTGATTGGTGGApri-miR163-RCGTTGTCGTTGAAGAGGTTG					
PINP1-RT-RTCTACTGGAAGATGATACGAGCTGAtUBQ10-FAAATCTCGTCTGTTATGCTTAAGAAGAtUBQ10-RAAAGGATAACAGGAACGGAAACATAGTDCL1-FAATGGGCATCAGCCGTTTACGAGADCL1-RAAATCTCTTTGCATGAGCCGGTCCpremiR319-FTGAGTCCATTCACAGGTCGTpremiR319-RTGGCGACTCGGTATTTGGATpremiR167-FTGTTGTGTTTCATGACGATGGTpremiR167-RCAACGGGTGAAACTGCGAApri-miR159-FGGAGCTCTACTCCATCGTCApri-miR159-RCCACGTTCTCATGAAACTTTpri-miR163-FGCATAGGTCTTGATTGGTGGApri-miR163-RCGTTGTCGTTGAAGAGGTTG					
AtUBQ10-FAAATCTCGTCTGTTATGCTTAAGAAGAtUBQ10-RAAAGAGATAACAGGAACGGAAACATAGTDCL1-FAATGGGCATCAGCCGTTTACGAGADCL1-RAAATCTCTTTGCATGAGCCGGTCCpremiR319-FTGAGTCCATTCACAGGTCGTpremiR319-RTGGCGACTCGGTATTTGGATpremiR167-FTGTTGTGTTTCATGACGATGGTpremiR167-RCAACGGGTGAAACTGCGAApri-miR159-FGGAGCTCTACTTCCATCGTCApri-miR159-RCCACGTTCTCATGAAACTTTpri-miR163-FGCATAGGTCTTGATTGGTGGApri-miR163-RCGTTGTCGTTGAAGAGGTTG					
AtUBQ10-RAAAGAGATAACAGGAACGGAAACATAGTDCL1-FAATGGGCATCAGCCGTTTACGAGADCL1-RAAATCTCTTTGCATGAGCCGGTCCpremiR319-FTGAGTCCATTCACAGGTCGTpremiR319-RTGGCGACTCGGTATTTGGATpremiR167-FTGTTGTGTTTCATGACGATGGTpremiR167-RCAACGGGTGAAACTGCGAApri-miR159-FGGAGCTCTACTTCCATCGTCApri-miR159-RCCACGTTCTCATCAAAACTTTpri-miR163-FGCATAGGTCTTGATTGGTGGApri-miR163-RCGTTGTCGTTGAAGAGGTTG					
DCL1-FAATGGGCATCAGCCGTTTACGAGADCL1-RAAATCTCTTTGCATGAGCCGGTCCpremiR319-FTGAGTCCATTCACAGGTCGTpremiR319-RTGGCGACTCGGTATTTGGATpremiR167-FTGTTGTGTTTCATGACGATGGTpremiR167-RCAACGGGTGAAACTGCGAApri-miR159-FGGAGCTCTACTTCCATCGTCApri-miR159-RCCACGTTCTCATCAAAACTTTpri-miR163-FGCATAGGTCTTGATTGGTGGApri-miR163-RCGTTGTCGTTGAAGAGGTTG		•			
DCL1-RAAATCTCTTTGCATGAGCCGGTCCpremiR319-FTGAGTCCATTCACAGGTCGTpremiR319-RTGGCGACTCGGTATTTGGATpremiR167-FTGTTGTGTTTCATGACGATGGTpremiR167-RCAACGGGTGAAACTGCGAApri-miR159-FGGAGCTCTACTTCCATCGTCApri-miR159-RCCACGTTCTCATCAAAACTTTpri-miR163-FGCATAGGTCTTGATTGGTGGApri-miR163-RCGTTGTCGTTGAAGAGGTTG		-			
premiR319-FTGAGTCCATTCACAGGTCGTpremiR319-RTGGCGACTCGGTATTTGGATpremiR167-FTGTTGTGTTTCATGACGATGGTpremiR167-RCAACGGGTGAAACTGCGAApri-miR159-FGGAGCTCTACTTCCATCGTCApri-miR159-RCCACGTTCTCATCAAAACTTTpri-miR163-FGCATAGGTCTTGATGGTGGApri-miR163-RCGTTGTCGTTGAAGAGGTTG					
premiR319-RTGGCGACTCGGTATTTGGATpremiR167-FTGTTGTGTTTCATGACGATGGTpremiR167-RCAACGGGTGAAACTGCGAApri-miR159-FGGAGCTCTACTTCCATCGTCApri-miR159-RCCACGTTCTCATCAAAACTTTpri-miR163-FGCATAGGTCTTGATGGTGGApri-miR163-RCGTTGTCGTTGAAGAGGTTG					
premiR167-FTGTTGTGTTTCATGACGATGGTpremiR167-RCAACGGGTGAAACTGCGAApri-miR159-FGGAGCTCTACTTCCATCGTCApri-miR159-RCCACGTTCTCATCAAAACTTTpri-miR163-FGCATAGGTCTTGATGGTGGApri-miR163-RCGTTGTCGTTGAAGAGGTTG		•			
premiR167-RCAACGGGTGAAACTGCGAApri-miR159-FGGAGCTCTACTTCCATCGTCApri-miR159-RCCACGTTCTCATCAAAACTTTpri-miR163-FGCATAGGTCTTGATGGTGGApri-miR163-RCGTTGTCGTTGAAGAGGTTG		•			
pri-miR159-FGGAGCTCTACTTCCATCGTCApri-miR159-RCCACGTTCTCATCAAAACTTTpri-miR163-FGCATAGGTCTTGATTGGTGGApri-miR163-RCGTTGTCGTTGAAGAGGTTG		•			
pri-miR159-RCCACGTTCTCATCAAAACTTTpri-miR163-FGCATAGGTCTTGATTGGTGGApri-miR163-RCGTTGTCGTTGAAGAGGTTG		•			
pri-miR163-F GCATAGGTCTTGATTGGTGGA pri-miR163-R CGTTGTCGTTGAAGAGGTTG		•			
pri-miR163-R CGTTGTCGTTGAAGAGGTTG		•			
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		•			

Table S3. Cont.

PNAS PNAS

Experiment	Primer name	Primer sequence (5' to 3')	
	pri-miR164-R	TTGATGGAGAAGCAGGGCAC	
	pri-miR166a-F	CACCACTCACTTATCTTCTTC	
	pri-miR166a-R	CAGTCGAAATTATAGAATCTAGGGT	
	pri-miR167-F	GAAGCTGCCAGCATGATCTA	
	pri-miR167-R	GGGTTTATAGAAGGGTGCGA	
	pri-miR171-F	CCGCGCCAATATCTCAGTA	
	pri-miR171-R	TGTCTCCATTTCAACACACA	
	pri-miR173-F	CTTCTTCTCACAAATAAACCCA	
	pri-miR173-R	AAGATCTCTAACATTAAATCAT	
	pri-miR319-F	AGAGGTTAGCATGTTGATGAC	
	pri-miR319-R	CCTCAAGTTATCATATCGGAG	
miRNA Northern blotting	miR159	TAGAGCTCCCTTCAATCCAAA	
	miR167	TAGATCATGTTGGCAGTTTCA	
	miR164	TGCACGTGCCCTGCTTCTCCA	
	miR171	CGTGATATTGGCACGGCTCAA	
	ASRP255	TACGCTATGTTGGACTTAGAA	
	ASRP1151	AAGTATCATCATTCGCTTGGA	
	ASR5D8	AAAGGCCTTACAAGGTCAAGA	
	miR173	GTGATTTCTCTCTGTAAGCGA	
	miR393	GATCAATGCGATCCCTTTGGA	
	miR166	GGGGAATGAACGCTGTTCGCT	
	miR390	GGCGCTATCCCTCCTGAGCTT	
	miR168	TTCCCGACCTGCACCAAGCGA	
	siR1003	ATGCCAAGTTTGGCCTCACCGTC	
	AtSN1	ACCAACGTGTTGTTGGCCCAGTGGTAAATCTCTCAGAT	
	SimpleHAT2	TGGGTTACCCATTTTGACACCCCTA	
	Cluster4	AAGATCAAACATCAGCAGCGTCAGAGGCTT	
	U6	AGGGGCCATGCTAATCTTCTC	
Silencing of PINP1	amiRPINP1	TCAGTATTCCAAAAAGGACGT	
NES	NES	CTGGCTTTGAAGTTAGCTGGTTTGGATATC	
	nes	CTTGCTCTTAAGGCGGCTGGAGCTGATGCT	

For PSR1, PSR1A, and PSR1M, the same primer sets were used in each experiment.