

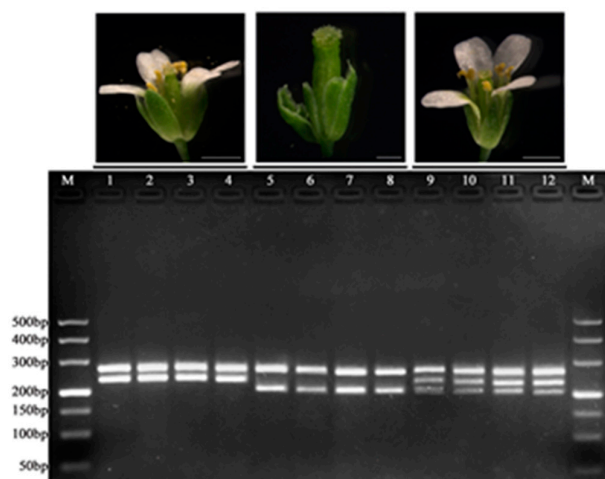


Figure S1. Genotyping and phenotype of wild-type, homozygous *pi-1* mutant and heterozygous *PI/pi-1* *Arabidopsis*. (1–4) The wild-type *Arabidopsis* produces normal flower with four sepals in whorl 1, four petals in whorl 2, six stamens in whorl 3 and a gynoecium in whorl 4, and the amplicon of wild-type *Arabidopsis* is cleaved into a 227-bp and a 267-bp fragment by *Bsp*HI. (5–8) The flower of homozygous *pi-1* mutant *Arabidopsis* with the second whorl petals converted into sepals and the third whorl stamens missing, and the amplicon of homozygous *pi-1* mutant *Arabidopsis* is cleaved into a 267-bp and a 202-bp fragment by *Bsp*HI. (9–12) The flower phenotype of heterozygote *PI/pi-1* *Arabidopsis* is identified with the flower of wild-type *Arabidopsis*, and the amplicon of heterozygote *PI/pi-1* *Arabidopsis* is cleaved into a 202-bp, a 227-bp and a 267-bp fragment by *Bsp*HI.

Table S1. Information on sequences selected for alignments and phylogenetic analyses from theNCBI GenBank.

Taxon and species	Protein name	Accession numbers	lineage
Cabombaceae			
<i>Brasenia schreberi</i>	BsPI	BAD42353.1	PI
<i>Brasenia schreberi</i>	BsAP3	BAD42352.1	AP3
Nymphaeaceae			
<i>Nuphar japonica</i>	NjPI	BAD42357.1	PI
<i>Nuphar japonica</i>	NjAP3-1	BAD42354.1	AP3
<i>Nymphaea tetragona</i>	NtPI	BAD42349.1	PI
<i>Nymphaea tetragona</i>	NtAP3	BAD42348.1	AP3
<i>Euryale ferox</i>	EfPI	BAD42347.1	PI
<i>Euryale ferox</i>	EfAP3	BAD42346.1	AP3
Winteraceae			
<i>Drimys winteri</i>	DrwPI-1	AAR87688.1	PI
<i>Drimys winteri</i>	DrwAP3-1	AAR87683.1	AP3
Aristolochiaceae			
<i>Aristolochia fimbriata</i>	AfifimPI	ALV83436.1	PI
<i>Aristolochia fimbriata</i>	AfifimAP3	ALV83437.1	AP3
Magnoliaceae			
<i>Magnolia figo</i>	MfPI-1	AAC42578.1	PI
<i>Magnolia figo</i>	MfAP3	AAC42592.1	AP3
<i>Magnolia wufengensis</i>	MAwuPI	AFM75882.1	PI

<i>Liriodendron tulipifera</i>	LituPI	AIE44761.1	PI
<i>Liriodendron tulipifera</i>	LtAP3	AIE44760.1	AP3
Lauraceae			
<i>Lindera erythrocarpa</i>	LnePI-1	AAR87699.1	PI
<i>Lindera erythrocarpa</i>	LneAP3-1	AAR87697.1	AP3
Chloranthaceae			
<i>Hedyosmum orientale</i>	HoAP3	AFP17802.1	AP3
<i>Hedyosmum orientale</i>	HoPI_3	AFP17800.1	PI
<i>Hedyosmum orientale</i>	HoPI_1	AFP17796.1	PI
Alismataceae			
<i>Sagittaria montevidensis</i>	SmAP3	AAF73934.1	AP3
<i>Sagittaria montevidensis</i>	SmPI	AAF73941.1	PI
Liliaceae			
<i>Lilium longiflorum</i>	LMADS8	AEI88009.1	PI
<i>Lilium longiflorum</i>	LMADS9	AEI88010.1	PI
Orchidaceae			
<i>Cymbidium faberi</i>	CyfaPI		PI
<i>Oncidium hybrid cultivar</i>	OMADS8	ADJ67236.1	PI
Poaceae			
<i>Streptochaeta angustifolia</i>	SaAP3	ABG90939.1	AP3
<i>Streptochaeta angustifolia</i>	SaPI1	ABG90946.1	PI
<i>Zea mays</i>	Zmm16	NP_001105136.1	PI
<i>Zea mays</i>	silky 1	NP_001104951.1	AP3
Fabaceae			
<i>Medicago truncatula</i>	MtPI	ACJ36228.1	PI
<i>Medicago truncatula</i>	MtNGL9	ACJ36229.1	PI
<i>Medicago truncatula</i>	MtTM6	AEW43602.1	TM6
Rosaceae			
<i>Taihangia rupestris</i>	TrPI	ABB59993.1	PI
Brassicaceae			
<i>Arabidopsis thaliana</i>	PI	NP_197524.1	PI
<i>Arabidopsis thaliana</i>	AP3	sp P35632.1	AP3
Oleaceae			
<i>Syringa vulgaris</i>	SvPI-1	AAC42576.1	PI
<i>Syringa vulgaris</i>	SvAP3	AAC42584.1	AP3
Bignoniaceae			
<i>Catalpa bungei</i>	CabuPI	AJY60427.1	PI
Scrophulariaceae			
<i>Antirrhinum majus</i>	GLO	CAA48725.1	PI
<i>Antirrhinum majus</i>	DEF	sp P23706.1	AP3
Rubiaceae			
<i>Coffea arabica</i>	CaPI	AHW58035.1	PI
<i>Coffea arabica</i>	CaAP3	AHW58030.1	AP3
<i>Coffea arabica</i>	CaTM	AHW58039.1	TM6
Solanaceae			
<i>Petunia x hybrida</i>	PhGLO1	AAS46018.1	PI
<i>Petunia x hybrida</i>	PhDEF	AAQ72510.2	AP3