

GEPHE SUMMARY

	Gephebase Gene		GepheID
Frigida (FRI) (https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=~Frigida+(FRI)^#gephebase-summary-title)		GP00000361	
	Entry Status	Martin	Main curator
Published			

PHENOTYPIC CHANGE

	Trait Category		
Physiology (https://www.gephebase.org/search-criteria?/and+Trait+Category=~Physiology^#gephebase-summary-title)			
	Trait		
Flowering time (https://www.gephebase.org/search-criteria?/and+Trait=~Flowering+time^#gephebase-summary-title)			
	Trait State in Taxon A		
Arabidopsis thaliana			
	Trait State in Taxon B		
Arabidopsis thaliana PYL			
	Ancestral State		
Taxon A			
	Taxonomic Status		
Intraspecific (https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=~Intraspecific^#gephebase-summary-title)			
Taxon A		Taxon B	
	Latin Name		Latin Name
Arabidopsis thaliana (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Arabidopsis+thaliana^#gephebase-summary-title)		Arabidopsis thaliana (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Arabidopsis+thaliana^#gephebase-summary-title)	
	Common Name		Common Name
thale cress		thale cress	
	Synonyms		Synonyms
thale cress; mouse-ear cress; thale-cress; Arabidopsis thaliana (L.) Heynh.; Arabidopsis thaliana (thale cress); Arabidopsis_thaliana; Arbisopsis thaliana; thale kress		thale cress; mouse-ear cress; thale-cress; Arabidopsis thaliana (L.) Heynh.; Arabidopsis thaliana (thale cress); Arabidopsis_thaliana; Arbisopsis thaliana; thale kress	
	Rank		Rank
species		species	
	Lineage		Lineage
cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; rosids; malvids; Brassicales; Brassicaceae; Camelineae; Arabidopsis		cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; rosids; malvids; Brassicales; Brassicaceae; Camelineae; Arabidopsis	
	Parent		Parent
Arabidopsis () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3701)		Arabidopsis () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3701)	
	NCBI Taxonomy ID		NCBI Taxonomy ID
3702 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3702)		3702 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3702)	
	is Taxon A an Infrappecies?		is Taxon B an Infrappecies?
No		Yes	
			Taxon B Description
			Arabidopsis thaliana PYL

GENOTYPIC CHANGE

	Generic Gene Name		UniProtKB Arabidopsis thaliana
FRI		PoDH90 (http://www.uniprot.org/uniprot/PoDH90)	
	Synonyms		GenebankID or UniProtKB
-		AF228500 (https://www.ncbi.nlm.nih.gov/nucleotide/AF228500)	
	String		
-			
	Sequence Similarities		
Belongs to the Frigida family.			
	GO - Molecular Function		
-			
	GO - Biological Process		
GO:0030154 : cell differentiation (https://www.ebi.ac.uk/QuickGO/term/GO:0030154)			
GO:0009908 : flower development (https://www.ebi.ac.uk/QuickGO/term/GO:0009908)			
	GO - Cellular Component		
GO:0016607 : nuclear speck (https://www.ebi.ac.uk/QuickGO/term/GO:0016607)			

Yes ([https://www.gephebase.org/search-criteria?/and+Presumptive Null=~Yes^#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Presumptive+Null=~Yes^#gephebase-summary-title))

Presumptive Null

Coding ([https://www.gephebase.org/search-criteria?/and+Molecular Type=~Coding^#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Molecular+Type=~Coding^#gephebase-summary-title))

Molecular Type

Insertion ([https://www.gephebase.org/search-criteria?/and+Aberration Type=~Insertion^#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Aberration+Type=~Insertion^#gephebase-summary-title))

Aberration Type

1-9 bp

Insertion Size

1bp insertion at 766

Molecular Details of the Mutation

Candidate Gene ([https://www.gephebase.org/search-criteria?/and+Experimental Evidence=~Candidate Gene^#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Experimental+Evidence=~Candidate+Gene^#gephebase-summary-title))

Experimental Evidence

DNA polymorphism at the FRIGIDA gene in *Arabidopsis thaliana*: extensive nonsynonymous variation is consistent with local selection for flowering time. (2002) (<https://pubmed.ncbi.nlm.nih.gov/12140238>)

Main Reference

Le Corre V; Roux F; Reboud X

Authors

FRIGIDA (FRI) is a major gene involved in the regulation of flowering time in *Arabidopsis thaliana*. Nucleotide variation at this gene was investigated by sequencing 25 field ecotypes collected from western Europe. Genetic diversity at FRI was characterized by a high number of haplotypes and an excess of low-frequency polymorphisms. A large excess of intraspecific nonsynonymous variation associated with low synonymous variation was detected along the first exon in the FRI gene. In contrast, no excess of nonsynonymous divergence was detected between *A. thaliana* and *A. lyrata*. The Tajima and McDonald and Kreitman tests, however, suggested that this gene has evolved in a nonneutral fashion. Nonsynonymous variation included eight loss-of-function mutations that have probably arisen recently and independently in several locations. A phenotypic evaluation of the sequenced ecotypes confirmed that these loss-of-function mutations were associated with an early-flowering phenotype. Taken together, our results suggest that DNA polymorphism at the FRI gene in *A. thaliana* from western Europe has been shaped by recent positive selection for earliness in a set of isolated populations.

Abstract

Additional References

RELATED GEPHE

12 (AGAMOUS-LIKE 50, Cryptochrome 2 (CRY2) EDI allele, EARLY FLOWERING 3(ELF3), FLC (Flowering Locus C), FLM (MAF1), Flowering locus T (FT), Frigida like 1 (FRL1), Frigida like 2 (FRL2), MADS AFFECTING FLOWERING 2 (MAF2), SVP (SHORT VEGETATIVE PHASE), VIN3, HUA2) ([https://www.gephebase.org/search-criteria?/or+Taxon ID=~3702^/and+Trait=Flowering time/and+groupHaplotypes=true#gephebase-summary-title](https://www.gephebase.org/search-criteria?/or+Taxon+ID=~3702^/and+Trait=Flowering+time/and+groupHaplotypes=true#gephebase-summary-title))

Related Genes

18 ([https://www.gephebase.org/search-criteria?/or+Gene Gephebase=~Frigida \(FRI\)^/and+Taxon ID=~3702^/or+Gene Gephebase=~Frigida \(FRI\)^/and+Taxon ID=~3702^#gephebase-summary-title](https://www.gephebase.org/search-criteria?/or+Gene+Gephebase=~Frigida+(FRI)^/and+Taxon+ID=~3702^/or+Gene+Gephebase=~Frigida+(FRI)^/and+Taxon+ID=~3702^#gephebase-summary-title))

Related Haplotypes

EXTERNAL LINKS

COMMENTS