

## GEPHE SUMMARY

	Gephebase Gene		GepheID
Frigida (FRI) ( <a +frigida+(fri)^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=">https://www.gephebase.org/search-criteria?/and+Gene+Gephebase="+Frigida+(FRI)^#gephebase-summary-title</a> )		GP00000370	
	Entry Status	Courtier	Main curator
Published			

## PHENOTYPIC CHANGE

	Trait Category		
Physiology ( <a +physiology^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait+Category=">https://www.gephebase.org/search-criteria?/and+Trait+Category="+Physiology^#gephebase-summary-title</a> )			
	Trait		
Flowering time ( <a +flowering+time^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait=">https://www.gephebase.org/search-criteria?/and+Trait="+Flowering+time^#gephebase-summary-title</a> )			
	Trait State in Taxon A		
Arabidopsis thaliana- H51			
	Trait State in Taxon B		
Arabidopsis thaliana- Ull-2-3			
	Ancestral State		
Taxon A			
	Taxonomic Status		
Intraspecific ( <a +intraspecific^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=">https://www.gephebase.org/search-criteria?/and+Taxonomic+Status="+Intraspecific^#gephebase-summary-title</a> )			
Taxon A		Taxon B	
	Latin Name		Latin Name
Arabidopsis thaliana ( <a +arabidopsis+thaliana^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Arabidopsis+thaliana^#gephebase-summary-title</a> )		Arabidopsis thaliana ( <a +arabidopsis+thaliana^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Arabidopsis+thaliana^#gephebase-summary-title</a> )	
	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) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3701">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3701</a> )		Arabidopsis () - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3701">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3701</a> )	
	NCBI Taxonomy ID		NCBI Taxonomy ID
3702 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3702">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3702</a> )		3702 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3702">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3702</a> )	
	is Taxon A an Intraspecies?		is Taxon B an Intraspecies?
Yes		Yes	
	Taxon A Description		Taxon B Description
Arabidopsis thaliana- H51		Arabidopsis thaliana- Ull-2-3	

## GENOTYPIC CHANGE

	Generic Gene Name		UniProtKB Arabidopsis thaliana
FRI		P0DH90 ( <a href="http://www.uniprot.org/uniprot/P0DH90">http://www.uniprot.org/uniprot/P0DH90</a> )	
	Synonyms		GenebankID or UniProtKB
-		AF228500 ( <a href="https://www.ncbi.nlm.nih.gov/nucleotide/AF228500">https://www.ncbi.nlm.nih.gov/nucleotide/AF228500</a> )	
	String		
-			
	Sequence Similarities		
Belongs to the Frigida family.			
	GO - Molecular Function		
-			
	GO - Biological Process		
GO:0030154 : cell differentiation ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0030154">https://www.ebi.ac.uk/QuickGO/term/GO:0030154</a> )			
GO:0009908 : flower development ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0009908">https://www.ebi.ac.uk/QuickGO/term/GO:0009908</a> )			
	GO - Cellular Component		
GO:0016607 : nuclear speck ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0016607">https://www.ebi.ac.uk/QuickGO/term/GO:0016607</a> )			

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

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

Aberration Type

-

Deletion Size

deletion; AF375-6\*

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

Role of FRIGIDA and FLOWERING LOCUS C in determining variation in flowering time of Arabidopsis. (2005) (<https://pubmed.ncbi.nlm.nih.gov/15908596>)

Main Reference

Shindo C; Aranzana MJ; Lister C; Baxter C; Nicholls C; Nordborg M; Dean C

Authors

Arabidopsis (*Arabidopsis thaliana*) accessions provide an excellent resource to dissect the molecular basis of adaptation. We have selected 192 Arabidopsis accessions collected to represent worldwide and local variation and analyzed two adaptively important traits, flowering time and vernalization response. There was huge variation in the flowering habit of the different accessions, with no simple relationship to latitude of collection site and considerable diversity occurring within local regions. We explored the contribution to this variation from the two genes FRIGIDA (FRI) and FLOWERING LOCUS C (FLC), previously shown to be important determinants in natural variation of flowering time. A correlation of FLC expression with flowering time and vernalization was observed, but it was not as strong as anticipated due to many late-flowering/vernalization-requiring accessions being associated with low FLC expression and early-flowering accessions with high FLC expression. Sequence analysis of FRI revealed which accessions were likely to carry functional alleles, and, from comparison of flowering time with allelic type, we estimate that approximately 70% of flowering time variation can be accounted for by allelic variation of FRI. The maintenance and propagation of 20 independent nonfunctional FRI haplotypes suggest that the loss-of-function mutations can confer a strong selective advantage. Accessions with a common FRI haplotype were, in some cases, associated with very different FLC levels and wide variation in flowering time, suggesting additional variation at FLC itself or other genes regulating FLC. These data reveal how useful these Arabidopsis accessions will be in dissecting the complex molecular variation that has led to the adaptive phenotypic variation in flowering time.

Abstract

Additional References

## RELATED GEPHE

Related Genes

12 (AGAMOUS-LIKE 50, Cryptochrome 2 (CRY2) ED1 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 Haplotypes

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))

## EXTERNAL LINKS

## COMMENTS