

GEPHE SUMMARY

TFL1/FvTFL1 (https://www.gephebase.org/search-criteria?/and+GeneGephebase=TFL1/FvTFL1^#gephebase-summary-title)	Gephebase Gene	GP00001120	GephelD
Published	Entry Status	Martin	Main curator

PHENOTYPIC CHANGE

Trait #1	Trait Category
Physiology (https://www.gephebase.org/search-criteria?/and+TraitCategory=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
Fragaria vesca	Trait State in Taxon B
Fragaria vesca	

Trait #2	Trait Category
Physiology (https://www.gephebase.org/search-criteria?/and+TraitCategory=Physiology^#gephebase-summary-title)	Trait
Seasonal growth (https://www.gephebase.org/search-criteria?/and+Trait=Seasonal growth^#gephebase-summary-title)	Trait State in Taxon A
-	Trait State in Taxon B
-	

	Ancestral State		
Data not curated	Taxonomic Status		
Intraspecific (https://www.gephebase.org/search-criteria?/and+TaxonomicStatus=Intraspecific^#gephebase-summary-title)			
	Taxon A	Taxon B	
	Latin Name		Latin Name
Fragaria vesca (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=Fragaria vesca^#gephebase-summary-title)		Fragaria vesca (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=Fragaria vesca^#gephebase-summary-title)	
	Common Name		Common Name
wild strawberry	Synonyms	wild strawberry	Synonyms
wild strawberry; European strawberry; alpine strawberry; wood strawberry; Fragaria vesca L.	Rank	wild strawberry; European strawberry; alpine strawberry; wood strawberry; Fragaria vesca L.	Rank
species	Lineage	species	Lineage
cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; rosids; fabids; Rosales; Rosaceae; Rosoideae; Potentilleae; Fragariinae; Fragaria	Parent	cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; rosids; fabids; Rosales; Rosaceae; Rosoideae; Potentilleae; Fragariinae; Fragaria	Parent
Fragaria () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3746)	NCBI Taxonomy ID	Fragaria () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3746)	NCBI Taxonomy ID
57918 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=57918)	is Taxon A an Intraspecies?	57918 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=57918)	is Taxon B an Intraspecies?
No		No	

GENOTYPIC CHANGE

TFL1	Generic Gene Name	P93003 (http://www.uniprot.org/uniprot/P93003)	UniProtKB Arabidopsis thaliana
MED24.6; TERMINAL FLOWER 1; TFL-1; At5g03840; F8F6_50	Synonyms	AEP23097 (https://www.ncbi.nlm.nih.gov/nuccore/AEP23097)	GenebankID or UniProtKB
3702.AT5G03840.1 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=3702.AT5G03840.1)	String		
Belongs to the phosphatidylethanolamine-binding protein family.	Sequence Similarities		
GO:0003712 : transcription coregulator activity (https://www.ebi.ac.uk/QuickGO/term/GO:0003712)	GO - Molecular Function		
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:0009910 : negative regulation of flower development (https://www.ebi.ac.uk/QuickGO/term/GO:0009910) GO:0009744 : response to sucrose (https://www.ebi.ac.uk/QuickGO/term/GO:0009744) GO:0090344 : negative regulation of cell aging (https://www.ebi.ac.uk/QuickGO/term/GO:0090344) GO:0006623 : protein targeting to vacuole (https://www.ebi.ac.uk/QuickGO/term/GO:0006623)	GO - Biological Process		
GO:0005886 : plasma membrane (https://www.ebi.ac.uk/QuickGO/term/GO:0005886) GO:0005737 : cytoplasm (https://www.ebi.ac.uk/QuickGO/term/GO:0005737) GO:0005634 : nucleus (https://www.ebi.ac.uk/QuickGO/term/GO:0005634) GO:0031982 : vesicle (https://www.ebi.ac.uk/QuickGO/term/GO:0031982) GO:0005773 : vacuole (https://www.ebi.ac.uk/QuickGO/term/GO:0005773)	GO - Cellular Component		
Unknown (https://www.gephebase.org/search-criteria?/and+Presumptive Null=~Unknown~#gephebase-summary-title)			Presumptive Null
Cis-regulatory (https://www.gephebase.org/search-criteria?/and+Molecular Type=~Cis-regulatory~#gephebase-summary-title)			Molecular Type
Unknown (https://www.gephebase.org/search-criteria?/and+Aberration Type=~Unknown~#gephebase-summary-title)			Aberration Type
unknown			Molecular Details of the Mutation
Linkage Mapping (https://www.gephebase.org/search-criteria?/and+Experimental Evidence=~Linkage Mapping~#gephebase-summary-title)			Experimental Evidence
Mutation in TERMINAL FLOWER1 reverses the photoperiodic requirement for flowering in the wild strawberry <i>Fragaria vesca</i> . (2012) (https://pubmed.ncbi.nlm.nih.gov/22566495)			Main Reference
Koskela EA; Mouhu K; Albani MC; Kurokura T; Rantanen M; Sargent DJ; Battey NH; Coupland G; Elomaa P; Hytönen T			Authors
Photoperiodic flowering has been extensively studied in the annual short-day and long-day plants rice (<i>Oryza sativa</i>) and Arabidopsis (<i>Arabidopsis thaliana</i>), whereas less is known about the control of flowering in perennials. In the perennial wild strawberry, <i>Fragaria vesca</i> (Rosaceae), short-day and perpetual flowering long-day accessions occur. Genetic analyses showed that differences in their flowering responses are caused by a single gene, SEASONAL FLOWERING LOCUS, which may encode the <i>F. vesca</i> homolog of TERMINAL FLOWER1 (FvTFL1). We show through high-resolution mapping and transgenic approaches that FvTFL1 is the basis of this change in flowering behavior and demonstrate that FvTFL1 acts as a photoperiodically regulated repressor. In short-day <i>F. vesca</i> , long photoperiods activate FvTFL1 mRNA expression and short days suppress it, promoting flower induction. These seasonal cycles in FvTFL1 mRNA level confer seasonal cycling of vegetative and reproductive development. Mutations in FvTFL1 prevent long-day suppression of flowering, and the early flowering that then occurs under long days is dependent on the <i>F. vesca</i> homolog of FLOWERING LOCUS T. This photoperiodic response mechanism differs from those described in model annual plants. We suggest that this mechanism controls flowering within the perennial growth cycle in <i>F. vesca</i> and demonstrate that a change in a single gene reverses the photoperiodic requirements for flowering.			Abstract
			Additional References

RELATED GEPHE

No matches found.	Related Genes
No matches found.	Related Haplotypes

EXTERNAL LINKS

COMMENTS

