

GEPHE SUMMARY

Gephebase Gene		GepheID
EARLY FLOWERING 3/Hd17 (https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=^EARLY FLOWERING 3/Hd17^#gephebase-summary-title)	GP00000247	
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	
Oryza sativa - Nipponbare			
		Trait State in Taxon B	
Oryza sativa - Koshihikari			
		Ancestral State	
Data not curated			
		Taxonomic Status	
Domesticated (https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=^Domesticated^#gephebase-summary-title)			
Taxon A		Taxon B	
		Latin Name	
Oryza sativa (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Oryza sativa^#gephebase-summary-title)		Oryza sativa (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Oryza sativa^#gephebase-summary-title)	
		Common Name	
rice		rice	
		Synonyms	
rice; red rice; Oryza sativa L.		rice; red rice; Oryza sativa L.	
		Rank	
species		species	
		Lineage	
cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; Liliopsida; Petrosaviidae; commelinids; Poales; Poaceae; BOP clade; Oryzoideae; Oryzeae; Oryzinae; Oryza		cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; Liliopsida; Petrosaviidae; commelinids; Poales; Poaceae; BOP clade; Oryzoideae; Oryzeae; Oryzinae; Oryza	
		Parent	
Oryza () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4527)		Oryza () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4527)	
		NCBI Taxonomy ID	
4530 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4530)		4530 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4530)	
		is Taxon A an Intraspecies?	
Yes		is Taxon B an Intraspecies?	
		Taxon A Description	
Oryza sativa - Nipponbare		Taxon B Description	
		Oryza sativa - Koshihikari	

GENOTYPIC CHANGE

		Generic Gene Name	UniProtKB Arabidopsis thaliana
ELF3		O82804 (http://www.uniprot.org/uniprot/O82804)	
		Synonyms	GenebankID or UniProtKB
EARLY FLOWERING 3; F17H15.25; PYK20; At2g25930; T19L18.26		BAA83571 (https://www.ncbi.nlm.nih.gov/nuccore/BAA83571)	
		String	
3702.AT2G25930.1 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier= 3702.AT2G25930.1)			
		Sequence Similarities	
-			
		GO - Molecular Function	
GO:0003700 : DNA-binding transcription factor activity (https://www.ebi.ac.uk/QuickGO/term/GO:0003700)			
		GO - Biological Process	
GO:0009733 : response to auxin (https://www.ebi.ac.uk/QuickGO/term/GO:0009733)			
GO:0009826 : unidimensional cell growth			

(<https://www.ebi.ac.uk/QuickGO/term/GO:0009826>)
GO:0009737 : response to abscisic acid
(<https://www.ebi.ac.uk/QuickGO/term/GO:0009737>)
GO:0007623 : circadian rhythm (<https://www.ebi.ac.uk/QuickGO/term/GO:0007623>)
GO:0009409 : response to cold (<https://www.ebi.ac.uk/QuickGO/term/GO:0009409>)
GO:0009909 : regulation of flower development
(<https://www.ebi.ac.uk/QuickGO/term/GO:0009909>)
GO:2000028 : regulation of photoperiodism, flowering
(<https://www.ebi.ac.uk/QuickGO/term/GO:2000028>)
GO:0010031 : circumnutation (<https://www.ebi.ac.uk/QuickGO/term/GO:0010031>)
GO:0048573 : photoperiodism, flowering
(<https://www.ebi.ac.uk/QuickGO/term/GO:0048573>)
GO:0009585 : red, far-red light phototransduction
(<https://www.ebi.ac.uk/QuickGO/term/GO:0009585>)
GO:0010119 : regulation of stomatal movement
(<https://www.ebi.ac.uk/QuickGO/term/GO:0010119>)

GO - Cellular Component

GO:0005634 : nucleus (<https://www.ebi.ac.uk/QuickGO/term/GO:0005634>)

Presumptive Null

Unknown (<https://www.gephebase.org/search-criteria?/and+Presumptive Null=^Unknown^#gephebase-summary-title>)

Molecular Type

Unknown (<https://www.gephebase.org/search-criteria?/and+Molecular Type=^Unknown^#gephebase-summary-title>)

Aberration Type

Unknown (<https://www.gephebase.org/search-criteria?/and+Aberration Type=^Unknown^#gephebase-summary-title>)

Molecular Details of the Mutation

unknown

Experimental Evidence

Linkage Mapping (<https://www.gephebase.org/search-criteria?/and+Experimental Evidence=^Linkage Mapping^#gephebase-summary-title>)

Main Reference

Natural variation in Hd17, a homolog of Arabidopsis ELF3 that is involved in rice photoperiodic flowering. (2012) (<https://pubmed.ncbi.nlm.nih.gov/22399582>)

Authors

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Abstract

Flowering time of rice depends strongly on photoperiodic responses. We previously identified a quantitative trait locus, Heading date 17 (Hd17), that is associated with a difference in flowering time between Japanese rice (*Oryza sativa* L.) cultivars. Here, we show that the difference may result from a single nucleotide polymorphism within a putative gene that encodes a homolog of the Arabidopsis EARLY FLOWERING 3 protein, which plays important roles in maintaining circadian rhythms. Our results demonstrate that natural variation in Hd17 may change the transcription level of a flowering repressor, Grain number, plant height and heading date 7 (Ghd7), suggesting that Hd17 is part of rice's photoperiodic flowering pathway.

Additional References

RELATED GEPHE

Related Genes

9 (DTH2, Hd1, Hd6a, PRR37 pseudoresponse regulator protein 37, se5, Early flowering1 (EL1), HEADING DATE 1, Ehd1 (Response regulator), Ghd7) (<https://www.gephebase.org/search-criteria?/or+Taxon ID=^4530^/and+Trait=Flowering time/and+groupHaplotypes=true#gephebase-summary-title>)

Related Haplotypes

No matches found.

EXTERNAL LINKS

COMMENTS