

GEPHE SUMMARY

Ghd7 (https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=~Ghd7~#gephebase-summary-title)		Gephebase Gene	GP00000393	GepheID
Published		Entry Status	Martin	Main curator

PHENOTYPIC CHANGE

Trait #1	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	Trait State in Taxon B
Oryza sativa	

Trait #2	Trait Category
Morphology (https://www.gephebase.org/search-criteria?/and+Trait+Category=~Morphology~#gephebase-summary-title)	Trait
Inflorescence morphology (https://www.gephebase.org/search-criteria?/and+Trait=~Inflorescence+morphology~#gephebase-summary-title)	Trait State in Taxon A
-	Trait State in Taxon B
-	

Data not curated		Ancestral State		
Domesticated (https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=~Domesticated~#gephebase-summary-title)		Taxonomic Status		
Taxon A		Taxon B		
Oryza sativa (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Oryza+sativa~#gephebase-summary-title)	Latin Name	Oryza sativa (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Oryza+sativa~#gephebase-summary-title)	Latin Name	
rice	Common Name	rice	Common Name	
rice; red rice; Oryza sativa L.	Synonyms	rice; red rice; Oryza sativa L.	Synonyms	
species	Rank	species	Rank	
cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; Liliopsida; Petrosaviidae; commelinids; Poales; Poaceae; BOP clade; Oryzoideae; Oryzeae; Oryzinae; Oryza	Lineage	cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; Liliopsida; Petrosaviidae; commelinids; Poales; Poaceae; BOP clade; Oryzoideae; Oryzeae; Oryzinae; Oryza	Lineage	
Oryza () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4527)	Parent	Oryza () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4527)	Parent	
4530 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4530)	NCBI Taxonomy ID	4530 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4530)	NCBI Taxonomy ID	
No	is Taxon A an Intraspecies?	No	is Taxon B an Intraspecies?	

GENOTYPIC CHANGE

GHD7	Generic Gene Name	UniProtKB Oryza sativa subsp. japonica
		E5RQA1 (http://www.uniprot.org/uniprot/E5RQA1)
	Synonyms	GenebankID or UniProtKB
Ghd7; Os07g0261200; LOC_Os07g15770; P0046D03.119		AE078663 (https://www.ncbi.nlm.nih.gov/nuccore/AE078663)
	String	
39947.LOC_Os07g15770.1 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=39947.LOC_Os07g15770.1)		
	Sequence Similarities	
-	GO - Molecular Function	
	GO:0003677 : DNA binding (https://www.ebi.ac.uk/QuickGO/term/GO:0003677)	
	GO - Biological Process	
GO:0009908 : flower development (https://www.ebi.ac.uk/QuickGO/term/GO:0009908)		
	GO:0009909 : regulation of flower development (https://www.ebi.ac.uk/QuickGO/term/GO:0009909)	
	GO:0048579 : negative regulation of long-day photoperiodism, flowering (https://www.ebi.ac.uk/QuickGO/term/GO:0048579)	
GO:0005634 : nucleus (https://www.ebi.ac.uk/QuickGO/term/GO:0005634)	GO - Cellular Component	
Unknown (https://www.gephebase.org/search-criteria?/and*Presumptive Null=~Unknown~#gephebase-summary-title)		Presumptive Null
Unknown (https://www.gephebase.org/search-criteria?/and*Molecular Type=~Unknown~#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
Natural variation in Ghd7 is an important regulator of heading date and yield potential in rice. (2008) (https://pubmed.ncbi.nlm.nih.gov/18454147)		Main Reference
Xue W; Xing Y; Weng X; Zhao Y; Tang W; Wang L; Zhou H; Yu S; Xu C; Li X; Zhang Q		Authors
Yield potential, plant height and heading date are three classes of traits that determine the productivity of many crop plants. Here we show that the quantitative trait locus (QTL) Ghd7, isolated from an elite rice hybrid and encoding a CCT domain protein, has major effects on an array of traits in rice, including number of grains per panicle, plant height and heading date. Enhanced expression of Ghd7 under long-day conditions delays heading and increases plant height and panicle size. Natural mutants with reduced function enable rice to be cultivated in temperate and cooler regions. Thus, Ghd7 has played crucial roles for increasing productivity and adaptability of rice globally.		Abstract
		Additional References

RELATED GEPHE

	Related Genes
	9 (DTH2, EARLY FLOWERING 3/Hd17, Hd1, Hd6a, PRR37 pseudoresponse regulator protein 37, se5, Early flowering1 (EL1), HEADING DATE 1, Ehd1 (Response regulator)) (https://www.gephebase.org/search-criteria?/or+Taxon ID=~4530~/and+Trait=Flowering time/or+Taxon ID=~4530~/and+Trait=Inflorescence morphology/and+groupHaplotypes=true#gephebase-summary-title)
	Related Haplotypes
No matches found.	

EXTERNAL LINKS

COMMENTS