

GEPHE SUMMARY

OsLG1 (https://www.gephebase.org/search-criteria/?and+Gene Gephebase=^OsLG1^#gephebase-summary-title)	Gephebase Gene	GP00000811	GepheID
Published	Entry Status	Martin	Main curator

PHENOTYPIC CHANGE

	Trait Category		
Morphology (https://www.gephebase.org/search-criteria/?and+Trait Category=^Morphology^#gephebase-summary-title)	Trait		
Seed shattering (panicle shape) (https://www.gephebase.org/search-criteria/?and+Trait=^Seed+shattering+(panicle+shape)^#gephebase-summary-title)	Trait State in Taxon A		
Oryza rufipogon W630	Trait State in Taxon B		
Oryza sativa - Nipponbare	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	
Oryza rufipogon	Latin Name	Oryza sativa	Latin Name
(https://www.gephebase.org/search-criteria/?and+Taxon+and+Synonyms=^Oryza+rufipogon^#gephebase-summary-title)		(https://www.gephebase.org/search-criteria/?and+Taxon+and+Synonyms=^Oryza+sativa^#gephebase-summary-title)	
-	Common Name	rice	Common Name
red rice; common wild rice; Oryza rufipogon Griff.	Synonyms	rice; red rice; Oryza sativa L.	Synonyms
species	Rank	species	Rank
	Lineage		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	
Oryza () - (Rank: genus)	Parent	Oryza () - (Rank: genus)	Parent
(https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4527)	NCBI Taxonomy ID	(https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4527)	NCBI Taxonomy ID
4529		4530	
(https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4529)		(https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4530)	
Yes	is Taxon A an Infraspecies?	Yes	is Taxon B an Infraspecies?
Oryza rufipogon W630	Taxon A Description	Oryza sativa - Nipponbare	Taxon B Description

GENOTYPIC CHANGE

SPL8	Generic Gene Name	UniProtKB Oryza sativa subsp. japonica
LG1; SPL8; OsLG1; Os04g0656500; LOC_Os04g56170; OSJNBA0071I13.12	Synonyms	GenebankID or UniProtKB
39947.LOC_Os04g56170.1 (http://string-db.org/newstring_cgi/show_network_section.pl?identifier=39947.LOC_Os04g56170.1)	String	BAM78641 (https://www.ncbi.nlm.nih.gov/nuccore/BAM78641)
	Sequence Similarities	
	GO - Molecular Function	
GO:0046872 : metal ion binding (https://www.ebi.ac.uk/QuickGO/term/GO:0046872)		
GO:0003677 : DNA binding (https://www.ebi.ac.uk/QuickGO/term/GO:0003677)		
	GO - Biological Process	
	GO - Cellular Component	

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

unknown but fine-mapped 9.3kb region

Linkage Mapping (<https://www.gephebase.org/search-criteria?/and+Experimental+Evidence=^Linkage+Mapping^#gephebase-summary-title>)OsLG1 regulates a closed panicle trait in domesticated rice. (2013) (<https://pubmed.ncbi.nlm.nih.gov/23435087>)

Ishii T; Numaguchi K; Miura K; Yoshida K; Thanh PT; Htun TM; Yamasaki M; Komeda N; Matsumoto T; Terauchi R; Ishikawa R; Ashikari M

Reduction in seed shattering was an important phenotypic change during cereal domestication. Here we show that a simple morphological change in rice panicle shape, controlled by the SPR3 locus, has a large impact on seed-shedding and pollinating behaviors. In the wild genetic background of rice, we found that plants with a cultivated-like type of closed panicle had significantly reduced seed shedding through seed retention. In addition, the long awns in closed panicles disturbed the free exposure of anthers and stigmas on the flowering spikelets, resulting in a significant reduction of the outcrossing rate. We localized the SPR3 locus to a 9.3-kb genomic region, and our complementation tests suggest that this region regulates the liguleless gene (OsLG1). Sequencing analysis identified reduced nucleotide diversity and a selective sweep at the SPR3 locus in cultivated rice. Our results suggest that a closed panicle was a selected trait during rice domestication.

RELATED GEPHE

1 (shattering4 - sh4) (<https://www.gephebase.org/search-criteria?/or+Taxon+ID=^4529^/and+Trait=Seed+shattering/or+Taxon+ID=^4530^/and+Trait=Seed+shattering/and+groupHaplotypes=true#gephebase-summary-title>)

No matches found.

EXTERNAL LINKS

COMMENTS