

GEPHE SUMMARY

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

PHENOTYPIC CHANGE

Morphology (https://www.gephebase.org/search-criteria?/and+TraitCategory=^Morphology^#gephebase-summary-title)		Trait Category	
Seed shattering (panicle shape) (https://www.gephebase.org/search-criteria?/and+Trait=^Seed shattering (panicle shape)^#gephebase-summary-title)		Trait	
Oryza rufipogon W630		Trait State in Taxon A	
Oryza sativa - Nipponbare		Trait State in Taxon B	
Data not curated		Ancestral State	
Domesticated (https://www.gephebase.org/search-criteria?/and+TaxonomicStatus=^Domesticated^#gephebase-summary-title)		Taxonomic Status	
Taxon A		Taxon B	
Oryza rufipogon (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=^Oryza rufipogon^#gephebase-summary-title)		Oryza sativa (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=^Oryza sativa^#gephebase-summary-title)	
-		rice	
red rice; common wild rice; Oryza rufipogon Griff.		rice; red rice; Oryza sativa L.	
species		species	
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) (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)	
4529 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4529)		4530 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4530)	
Yes		Yes	
Oryza rufipogon W630		Oryza sativa - Nipponbare	

GENOTYPIC CHANGE

SPL8		UniProtKB Oryza sativa subsp. japonica	
LG1; SPL8; OsLG1; Os04g0656500; LOC_Os04g56170; OSJNBa007113.12		Q7XPY1 (http://www.uniprot.org/uniprot/Q7XPY1)	
39947.LOC_Os04g56170.1 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=39947.LOC_Os04g56170.1)		BAM78641 (https://www.ncbi.nlm.nih.gov/nuccore/BAM78641)	
-		-	
GO - Molecular Function		GenebankID or UniProtKB	
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			

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
Cis-regulatory (https://www.gephebase.org/search-criteria?/and+Molecular Type=^Cis-regulatory^#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 but fine-mapped 9.3kb region	Experimental Evidence
Linkage Mapping (https://www.gephebase.org/search-criteria?/and+Experimental Evidence=^Linkage Mapping^#gephebase-summary-title)	Main Reference
OsLG1 regulates a closed panicle trait in domesticated rice. (2013) (https://pubmed.ncbi.nlm.nih.gov/23435087)	Authors
Ishii T; Numaguchi K; Miura K; Yoshida K; Thanh PT; Htun TM; Yamasaki M; Komeda N; Matsumoto T; Terauchi R; Ishikawa R; Ashikari M	Abstract
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.	
	Additional References

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)	Related Genes
No matches found.	Related Haplotypes

EXTERNAL LINKS

COMMENTS