

GEPHE SUMMARY

shattering4 - sh4 (https://www.gephebase.org/search-criteria?/and+GeneGephebase=~shattering4 - sh4~#gephebase-summary-title)	Gephebase Gene	GepheID
	GP00001046	
	Entry Status	Main curator
Published		

PHENOTYPIC CHANGE

Physiology (https://www.gephebase.org/search-criteria?/and+TraitCategory=~Physiology~#gephebase-summary-title)		Trait Category	
Seed shattering (https://www.gephebase.org/search-criteria?/and+Trait=~Seedshattering~#gephebase-summary-title)		Trait	
Oryza rufipogon and Oryza nivara		Trait State in Taxon A	
Oryza sativa		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=~Oryzarufipogon~#gephebase-summary-title)		Oryza sativa (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Oryzasativa~#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)	
is Taxon A an Intraspecies?		is Taxon B an Intraspecies?	
No		No	

GENOTYPIC CHANGE

sh4	Generic Gene Name	UniProtKB Oryza sativa subsp. indica
	Q1PIH9 (http://www.uniprot.org/uniprot/Q1PIH9)	
	Synonyms	GenebankID or UniProtKB
SHA1	AFI99124 (https://www.ncbi.nlm.nih.gov/nuccore/AFI99124)	
-	String	
-	Sequence Similarities	
-	GO - Molecular Function	
-	GO - Biological Process	
-	GO - Cellular Component	
-		
No (https://www.gephebase.org/search-criteria?/and+Presumptive+Null=~No~#gephebase-summary-title)		Presumptive Null
Coding (https://www.gephebase.org/search-criteria?/and+Molecular+Type=~Coding~#gephebase-summary-title)		Molecular Type

Aberration Type

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

SNP Coding Change

Nonsynonymous

Molecular Details of the Mutation

Asn -> Lys

Experimental Evidence

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

	Taxon A	Taxon B	Position
Codon	-	-	-
Amino-acid	-	-	-

Main Reference

Rice domestication by reducing shattering. (2006) (<https://pubmed.ncbi.nlm.nih.gov/16527928>)

Authors

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Abstract

Crop domestication frequently began with the selection of plants that did not naturally shed ripe fruits or seeds. The reduction in grain shattering that led to cereal domestication involved genetic loci of large effect. The molecular basis of this key domestication transition, however, remains unknown. Here we show that human selection of an amino acid substitution in the predicted DNA binding domain encoded by a gene of previously unknown function was primarily responsible for the reduction of grain shattering in rice domestication. The substitution undermined the gene function necessary for the normal development of an abscission layer that controls the separation of a grain from the pedicel.

Additional References

RELATED GEPHE

Related Genes

1 (OsLG1) (<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 Haplotypes

No matches found.

EXTERNAL LINKS

COMMENTS

Verify Orthology