

GEPHE SUMMARY

		Gephebase Gene		GepheID
Shattering1 - OsSh1 (https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=~Shattering1-OsSh1^#gephebase-summary-title)			GP00001038	
Published		Entry Status	Martin	Main curator

PHENOTYPIC CHANGE

		Trait Category	
Physiology (https://www.gephebase.org/search-criteria?/and+Trait+Category=~Physiology^#gephebase-summary-title)			
		Trait	
Seed shattering (https://www.gephebase.org/search-criteria?/and+Trait=~Seed+shattering^#gephebase-summary-title)			
		Trait State in Taxon A	
Oryza barthii; Oryza sativa wild-type			
		Trait State in Taxon B	
Oryza glaberrima (Africa; domesticated strains)			
		Ancestral State	
Taxon A			
		Taxonomic Status	
Domesticated (https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=~Domesticated^#gephebase-summary-title)			

Taxon A	Latin Name	Taxon B	Latin Name
Oryza barthii (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Oryza+barthii^#gephebase-summary-title)		Oryza glaberrima (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Oryza+glaberrima^#gephebase-summary-title)	
-	Common Name	-	Common Name
	African rice		African rice
Synonyms		Synonyms	
Oryza breviligulata; African wild rice; Oryza barthii A.Chev.; Oryza breviligulata A.Chev. & Roehr.		African rice; Oryza glaberrima Steud.	
species	Rank	species	Rank
	cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; Liliopsida; Petrosaviidae; commelinids; Poales; Poaceae; BOP clade; Oryzoideae; Oryzaceae; Oryzinae; Oryza		cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; Liliopsida; Petrosaviidae; commelinids; Poales; Poaceae; BOP clade; Oryzoideae; Oryzaceae; Oryzinae; Oryza
	Lineage		Lineage
Parent		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)	
65489 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=65489)	NCBI Taxonomy ID	4538 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4538)	NCBI Taxonomy ID
	is Taxon A an Intraspecies?		is Taxon B an Intraspecies?
	No		No

GENOTYPIC CHANGE

		Generic Gene Name		UniProtKB Oryza sativa subsp. japonica
YAB2			Q10FZ7 (http://www.uniprot.org/uniprot/Q10FZ7)	
		Synonyms		GenebankID or UniProtKB
FIL2; Os03g0650000; LOC_Os03g44710			()	
		String		
39947.LOC_Os03g44710.1 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=39947.LOC_Os03g44710.1)				
		Sequence Similarities		
Belongs to the YABBY family.				
		GO - Molecular Function		
GO:0046872 : metal ion binding (https://www.ebi.ac.uk/QuickGO/term/GO:0046872)				
		GO - Biological Process		
GO:0007275 : multicellular organism development (https://www.ebi.ac.uk/QuickGO/term/GO:0007275)				
GO:0045165 : cell fate commitment (https://www.ebi.ac.uk/QuickGO/term/GO:0045165)				
GO:0010158 : abaxial cell fate specification				

(<https://www.ebi.ac.uk/QuickGO/term/GO:0010158>)

GO - Cellular Component

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

Presumptive Null

Yes ([https://www.gephebase.org/search-criteria?/and+Presumptive Null=~Yes^#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Presumptive+Null=~Yes^#gephebase-summary-title))

Molecular Type

Gene Loss ([https://www.gephebase.org/search-criteria?/and+Molecular Type=~Gene Loss^#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Molecular+Type=~Gene+Loss^#gephebase-summary-title))

Aberration Type

Deletion ([https://www.gephebase.org/search-criteria?/and+Aberration Type=~Deletion^#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Aberration+Type=~Deletion^#gephebase-summary-title))

Deletion Size

10-100 kb

Molecular Details of the Mutation

45kb deletion resulting in complete removal of OsSh1 in *O. glaberrima*; resulting in seed abscission phenotype

Experimental Evidence

Association Mapping ([https://www.gephebase.org/search-criteria?/and+Experimental Evidence=~Association Mapping^#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Experimental+Evidence=~Association+Mapping^#gephebase-summary-title))

Main Reference

The genome sequence of African rice (*Oryza glaberrima*) and evidence for independent domestication. (2014) (<https://pubmed.ncbi.nlm.nih.gov/25064006>)

Authors

Wang M; Yu Y; Haberer G; Marri PR; Fan C; Goicoechea JL; Zuccolo A; Song X; Kudrna D; Ammiraju JS; Cossu RM; Maldonado C; Chen J; Lee S; Sisneros N; de Baynast K; Golser W; Wissotski M; Kim W; Sanchez P; Ndjiondjop MN; Sanni K; Long M; Carney J; Panaud O; Wicker T; Machado CA; Chen M; Mayer KF; Rounsley S; Wing RA

Abstract

The cultivation of rice in Africa dates back more than 3,000 years. Interestingly, African rice is not of the same origin as Asian rice (*Oryza sativa* L.) but rather is an entirely different species (i.e., *Oryza glaberrima* Steud.). Here we present a high-quality assembly and annotation of the *O. glaberrima* genome and detailed analyses of its evolutionary history of domestication and selection. Population genomics analyses of 20 *O. glaberrima* and 94 *Oryza barthii* accessions support the hypothesis that *O. glaberrima* was domesticated in a single region along the Niger river as opposed to noncentric domestication events across Africa. We detected evidence for artificial selection at a genome-wide scale, as well as with a set of *O. glaberrima* genes orthologous to *O. sativa* genes that are known to be associated with domestication, thus indicating convergent yet independent selection of a common set of genes during two geographically and culturally distinct domestication processes.

Additional References

RELATED GEPHE

Related Genes

1 (shattering4 - sh4) ([https://www.gephebase.org/search-criteria?/or+Taxon ID=~65489^/and+Trait=Seed shattering/or+Taxon ID=~4538^/and+Trait=Seed shattering/and+groupHaplotypes=true#gephebase-summary-title](https://www.gephebase.org/search-criteria?/or+Taxon+ID=~65489^/and+Trait=Seed+shattering/or+Taxon+ID=~4538^/and+Trait=Seed+shattering/and+groupHaplotypes=true#gephebase-summary-title))

Related Haplotypes

No matches found.

EXTERNAL LINKS

COMMENTS