

## GEPHE SUMMARY

	Gephebase Gene	GephelD
Shattering1 - OsSh1 ( <a href="https://www.gephebase.org/search-criteria/?and+Gene+Gephebase=^Shattering1 - OsSh1">#gephebase-summary-title)</a>	GP00001038	
	Entry Status	Main curator
Published	Martin	

## PHENOTYPIC CHANGE

	Trait Category		
Physiology ( <a href="https://www.gephebase.org/search-criteria/?and+Trait+Category=^Physiology">#gephebase-summary-title)</a>	Trait		
Seed shattering ( <a href="https://www.gephebase.org/search-criteria/?and+Trait=^Seed+shattering">#gephebase-summary-title)</a>	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 ( <a href="https://www.gephebase.org/search-criteria/?and+Taxonomic+Status=^Domesticated">#gephebase-summary-title)</a>			
Taxon A	Latin Name	Taxon B	Latin Name
Oryza barthii ( <a href="https://www.gephebase.org/search-criteria/?and+Taxon+and+Synonyms=^Oryza+barthii">#gephebase-summary-title)</a>	Oryza glaberrima ( <a href="https://www.gephebase.org/search-criteria/?and+Taxon+and+Synonyms=^Oryza+glaberrima">#gephebase-summary-title)</a>		
-	Common Name		Common Name
Oryza breviligulata; African wild rice; Oryza barthii A.Chev.; Oryza breviligulata A.Chev. & Roehr.	African rice		Synonyms
species	Rank	species	Rank
	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) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4527">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4527</a> )	Parent	Oryza () - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4527">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4527</a> )	Parent
65489 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 65489">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 65489</a> )	NCBI Taxonomy ID	4538 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4538">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4538</a> )	NCBI Taxonomy ID
No	is Taxon A an Infraspecies?	No	is Taxon B an Infraspecies?

## GENOTYPIC CHANGE

	Generic Gene Name	UniProtKB Oryza sativa subsp. japonica
YAB2		
FIL2; Os03g065000; LOC_Os03g44710	Synonyms	GenebankID or UniProtKB
39947.LOC_Os03g44710.1 ( <a href="http://string-db.org/newstring_cgi/show_network_section.pl?identifier=39947.LOC_Os03g44710.1">http://string-db.org/newstring_cgi/show_network_section.pl?identifier=39947.LOC_Os03g44710.1</a> )	String	
Belongs to the YABBY family.	Sequence Similarities	
	GO - Molecular Function	
GO:0046872 : metal ion binding ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0046872">https://www.ebi.ac.uk/QuickGO/term/GO:0046872</a> )		
	GO - Biological Process	
GO:0007275 : multicellular organism development ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0007275">https://www.ebi.ac.uk/QuickGO/term/GO:0007275</a> )		
GO:0045165 : cell fate commitment ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0045165">https://www.ebi.ac.uk/QuickGO/term/GO:0045165</a> )		
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=%27Yes%27#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Presumptive%20Null=%27Yes%27#gephebase-summary-title))

Molecular Type

Gene Loss ([https://www.gephebase.org/search-criteria?/and+Molecular Type=%27Gene Loss%27#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Molecular%20Type=%27Gene%20Loss%27#gephebase-summary-title))

Aberration Type

Deletion ([https://www.gephebase.org/search-criteria?/and+Aberration Type=%27Deletion%27#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Aberration%20Type=%27Deletion%27#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=%27Association Mapping%27#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Experimental%20Evidence=%27Association%20Mapping%27#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=%2765489%27/and+Trait=Seed shattering/or+Taxon ID=%274538%27/and+Trait=Seed shattering/and+groupHaplotypes=true#gephebase-summary-title](https://www.gephebase.org/search-criteria?/or+Taxon%20ID=%2765489%27/and+Trait=Seed%20shattering/or+Taxon%20ID=%274538%27/and+Trait=Seed%20shattering/and+groupHaplotypes=true#gephebase-summary-title))

Related Haplotypes

No matches found.

## EXTERNAL LINKS

## COMMENTS