

GEPHE SUMMARY

SKC1 =OsHKT1 (<a +skc1+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+GeneGephebase=">https://www.gephebase.org/search-criteria?/and+GeneGephebase="+SKC1+"#gephebase-summary-title)	Gephebase Gene	GP00001055	GepheID
	Entry Status	Courtier	Main curator
	Published		

PHENOTYPIC CHANGE

Physiology (<a +physiology+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+TraitCategory=">https://www.gephebase.org/search-criteria?/and+TraitCategory="+Physiology+"#gephebase-summary-title)		Trait Category	
Salt tolerance (<a +salt+tolerance+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait=">https://www.gephebase.org/search-criteria?/and+Trait="+Salt+tolerance+"#gephebase-summary-title)		Trait	
Oryza sativa var. japonica Koshihikari		Trait State in Taxon A	
Oryza sativa var. indica; Nona Bokra		Trait State in Taxon B	
Data not curated		Ancestral State	
Domesticated (<a +domesticated+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+TaxonomicStatus=">https://www.gephebase.org/search-criteria?/and+TaxonomicStatus="+Domesticated+"#gephebase-summary-title)		Taxonomic Status	
Taxon A		Taxon B	
Oryza sativa (<a +oryza+sativa+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Oryza+sativa+"#gephebase-summary-title)		Oryza sativa (<a +oryza+sativa+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Oryza+sativa+"#gephebase-summary-title)	
rice		rice	
rice; red rice; Oryza sativa L.		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)	
4530 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4530)		4530 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4530)	
is Taxon A an Intraspecies?		is Taxon B an Intraspecies?	
Yes		Yes	
Oryza sativa var. japonica Koshihikari		Oryza sativa var. indica; Nona Bokra	

GENOTYPIC CHANGE

HKT8	Generic Gene Name	UniProtKB Oryza sativa subsp. indica
	Synonyms	A2WNZ9 (http://www.uniprot.org/uniprot/A2WNZ9)
	String	AAZ76552 (https://www.ncbi.nlm.nih.gov/nuccore/AAZ76552)
39946.BGIOSGA001800-PA (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=39946.BGIOSGA001800-PA)		
Belongs to the TrkH potassium transport family. HKT (TC 2.A.38.3) subfamily.		
GO:0008324 : cation transmembrane transporter activity (https://www.ebi.ac.uk/QuickGO/term/GO:0008324)		
GO:0006814 : sodium ion transport (https://www.ebi.ac.uk/QuickGO/term/GO:0006814)		
GO - Cellular Component		

GO:0016021 : integral component of membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0016021>)

No (<https://www.gephebase.org/search-criteria?/and+Presumptive Null=~No^#gephebase-summary-title>)

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

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

Nonsynonymous

several candidate missense mutations

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

Presumptive Null

Molecular Type

Aberration Type

SNP Coding Change

Molecular Details of the Mutation

Experimental Evidence

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

A rice quantitative trait locus for salt tolerance encodes a sodium transporter. (2005) (<https://pubmed.ncbi.nlm.nih.gov/16155566>)

Ren ZH; Gao JP; Li LG; Cai XL; Huang W; Chao DY; Zhu MZ; Wang ZY; Luan S; Lin HX

Many important agronomic traits in crop plants, including stress tolerance, are complex traits controlled by quantitative trait loci (QTLs). Isolation of these QTLs holds great promise to improve world agriculture but is a challenging task. We previously mapped a rice QTL, SKC1, that maintained K(+) homeostasis in the salt-tolerant variety under salt stress, consistent with the earlier finding that K(+) homeostasis is important in salt tolerance. To understand the molecular basis of this QTL, we isolated the SKC1 gene by map-based cloning and found that it encoded a member of HKT-type transporters. SKC1 is preferentially expressed in the parenchyma cells surrounding the xylem vessels. Voltage-clamp analysis showed that SKC1 protein functions as a Na(+)-selective transporter. Physiological analysis suggested that SKC1 is involved in regulating K(+)/Na(+) homeostasis under salt stress, providing a potential tool for improving salt tolerance in crops.

Additional References

RELATED GEPHE

No matches found.

No matches found.

Related Genes

Related Haplotypes

EXTERNAL LINKS

COMMENTS