

GEPHE SUMMARY

Xa26 (https://www.gephebase.org/search-criteria/?and+Gene Gephebase=Xa26^#gephebase-summary-title)	Gephebase Gene	GP00001218	GepheID
	Entry Status	Martin	Main curator
Published			

PHENOTYPIC CHANGE

	Trait Category		
Physiology (https://www.gephebase.org/search-criteria/?and+Trait Category=Physiology^#gephebase-summary-title)	Trait		
Pathogen resistance (https://www.gephebase.org/search-criteria/?and+Trait=^Pathogen resistance^#gephebase-summary-title)	Trait State in Taxon A		
Oryza sativa - wild-type	Trait State in Taxon B		
Oryza sativa- bacterial blight resistant Minghui 63	Ancestral State		
Data not curated	Taxonomic Status		
Intraspecific (https://www.gephebase.org/search-criteria/?and+Taxonomic Status=Intraspecific^#gephebase-summary-title)			
Taxon A		Taxon B	
Oryza sativa (https://www.gephebase.org/search-criteria/?and+Taxon+and+Synonyms=^Oryza+sativa^#gephebase-summary-title)	Latin Name	Oryza sativa (https://www.gephebase.org/search-criteria/?and+Taxon+and+Synonyms=^Oryza+sativa^#gephebase-summary-title)	Latin Name
rice	Common Name	rice	Common Name
rice; red rice; Oryza sativa L.	Synonyms	rice; red rice; Oryza sativa L.	Synonyms
species	Rank	species	Rank
	Lineage		Lineage
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)	Parent	Oryza () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4527)	Parent
4530 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4530)	NCBI Taxonomy ID	4530 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4530)	NCBI Taxonomy ID
No	is Taxon A an Infraspecies?	No	is Taxon B an Infraspecies?

GENOTYPIC CHANGE

Xa26	Generic Gene Name	UniProtKB Oryza sativa subsp. japonica
-	Synonyms	GenebankID or UniProtKB
-	String	ABD84048 (https://www.ncbi.nlm.nih.gov/nuccore/ABD84048)
	Sequence Similarities	
Belongs to the protein kinase superfamily. Ser/Thr protein kinase family.		
GO:0005524 : ATP binding (https://www.ebi.ac.uk/QuickGO/term/GO:0005524)	GO - Molecular Function	
GO:0004674 : protein serine/threonine kinase activity (https://www.ebi.ac.uk/QuickGO/term/GO:0004674)		
	GO - Biological Process	
	GO - Cellular Component	
GO:0016021 : integral component of membrane (https://www.ebi.ac.uk/QuickGO/term/GO:0016021)		Presumptive Null

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

Molecular Type

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

Aberration Type

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

Molecular Details of the Mutation

unknown

Experimental Evidence

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

Main Reference

Xa26, a gene conferring resistance to *Xanthomonas oryzae* pv. *oryzae* in rice, encodes an LRR receptor kinase-like protein. (2004) (<https://pubmed.ncbi.nlm.nih.gov/14756760>)

Authors

Sun X; Cao Y; Yang Z; Xu C; Li X; Wang S; Zhang Q

Abstract

Rice bacterial blight, caused by *Xanthomonas oryzae* pv. *oryzae* (Xoo), is one of the most serious rice diseases worldwide. A rice gene, Xa26, conferring resistance against Xoo at both seedling and adult stages was isolated by map-based cloning strategies from the rice cultivar Minghui 63. Xa26 belongs to a multigene family consisting of four members. It encodes a leucine-rich repeat (LRR) receptor kinase-like protein and is constitutively expressed. Sequence analysis revealed that IRBB3 and Zhachanglong lines that are resistant to a broad range of Xoo strains, also carry Xa26. However, significant difference in lesion length was observed among these lines after inoculation with a set of Xoo strains. Moreover, transgenic plants carrying Xa26 showed enhanced resistance compared with the donor line of the gene in both seedling and adult stages. These results suggest that the resistance conferred by Xa26 is influenced by the genetic background.

Additional References

RELATED GEPHE

Related Genes

15 (Pi-ta, Pi2 (Nbs4-Pi2), Pi36, Pi37, Pi5-1 + Pi5-2 cluster, Pi9 (= Nbs2-Pi9), Pib, Pid3, PigmR, Pikm1-TS + Pikm2-TS cluster, Pit, Piz-t, SLB1/2, Xa1, Xa21) ([#gephebase-summary-title\)](https://www.gephebase.org/search-criteria?/or+Taxon+ID=^4530^/and+Trait=Pathogen+resistance/and+groupHaplotypes=true)

Related Haplotypes

No matches found.

EXTERNAL LINKS

COMMENTS