

GEPHE SUMMARY

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

PHENOTYPIC CHANGE

	Trait Category		
Physiology (https://www.gephebase.org/search-criteria?/and+TraitCategory=~Physiology~#gephebase-summary-title)		Trait	
Pathogen resistance (https://www.gephebase.org/search-criteria?/and+Trait=~Pathogenresistance~#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+TaxonomicStatus=~Intraspecific~#gephebase-summary-title)			
	Taxon A		Taxon B
	Latin Name		Latin Name
Oryza sativa (https://www.gephebase.org/search-criteria?/and+TaxonandSynonyms=~Oryzasativa~#gephebase-summary-title)		Oryza sativa (https://www.gephebase.org/search-criteria?/and+TaxonandSynonyms=~Oryzasativa~#gephebase-summary-title)	
	Common Name		Common Name
rice		rice	
	Synonyms		Synonyms
rice; red rice; Oryza sativa L.		rice; red rice; Oryza sativa L.	
	Rank		Rank
species		species	
	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	
	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)	
	NCBI Taxonomy ID		NCBI Taxonomy ID
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?
No		No	

GENOTYPIC CHANGE

	Generic Gene Name		UniProtKB Oryza sativa subsp. japonica
Xa26		Q00KZ8 (http://www.uniprot.org/uniprot/Q00KZ8)	
	Synonyms		GenebankID or UniProtKB
-		ABD84048 (https://www.ncbi.nlm.nih.gov/nuccore/ABD84048)	
	String		
-			
	Sequence Similarities		
Belongs to the protein kinase superfamily. Ser/Thr protein kinase family.			
	GO - Molecular Function		
GO:0005524 : ATP binding (https://www.ebi.ac.uk/QuickGO/term/GO:0005524)			
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 (https://www.gephebase.org/search-criteria?/and+Presumptive Null=~Unknown~#gephebase-summary-title)	Molecular Type
Coding (https://www.gephebase.org/search-criteria?/and+Molecular Type=~Coding~#gephebase-summary-title)	Aberration Type
Unknown (https://www.gephebase.org/search-criteria?/and+Aberration Type=~Unknown~#gephebase-summary-title)	Molecular Details of the Mutation
unknown	Experimental Evidence
Linkage Mapping (https://www.gephebase.org/search-criteria?/and+Experimental Evidence=~Linkage Mapping~#gephebase-summary-title)	Main Reference
Xa26, a gene conferring resistance to <i>Xanthomonas oryzae</i> pv. <i>oryzae</i> 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 <i>Xanthomonas oryzae</i> pv. <i>oryzae</i> (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

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) (https://www.gephebase.org/search-criteria?/or+Taxon ID=~4530~/and+Trait=Pathogen resistance/and+groupHaplotypes=true#gephebase-summary-title)	Related Genes
No matches found.	Related Haplotypes

EXTERNAL LINKS

COMMENTS