

GEPHE SUMMARY

Pib (https://www.gephebase.org/search-criteria?/and+Gene Gephebase=%Pib%#gephebase-summary-title)	Gephebase Gene	GP00000882	GephelD
	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 - blast susceptible Nipponbare	Trait State in Taxon B		
Oryza sativa - blast resistant Gumei2	Ancestral State		
Data not curated	Taxonomic Status		
Domesticated (https://www.gephebase.org/search-criteria?/and+Taxonomic Status=%Domesticated%#gephebase-summary-title)			
Taxon A		Taxon B	
Oryza sativa	Latin Name	Oryza sativa	Latin Name
(https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=%Oryza sativa%#gephebase-summary-title)		(https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=%Oryza sativa%#gephebase-summary-title)	
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)	Parent	Oryza () - (Rank: genus)	Parent
(https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4527)		(https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4527)	
4530	NCBI Taxonomy ID	4530	NCBI Taxonomy ID
(https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4530)		(https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4530)	
Yes	is Taxon A an Infraspecies?	Yes	is Taxon B an Infraspecies?
	Taxon A Description		Taxon B Description
Oryza sativa - blast susceptible Nipponbare		Oryza sativa - blast resistant Gumei2	

GENOTYPIC CHANGE

Pi-b	Generic Gene Name	UniProtKB Oryza sativa
Pib	Synonyms	GenebankID or UniProtKB
-	String	
	Sequence Similarities	
Belongs to the disease resistance NB-LRR family.		
	GO - Molecular Function	
GO:0043531 : ADP binding (https://www.ebi.ac.uk/QuickGO/term/GO:0043531)		
	GO - Biological Process	
-	GO - Cellular Component	
		Presumptive Null
Unknown (https://www.gephebase.org/search-criteria?/and+Presumptive Null=%Unknown%#gephebase-summary-title)		

Unknown (https://www.gephebase.org/search-criteria?/and+Molecular Type=%5EUnknown%23gephebase-summary-title)	Molecular Type
Unknown (https://www.gephebase.org/search-criteria?/and+Aberration Type=%5EUnknown%23gephebase-summary-title)	Aberration Type
unknown	Molecular Details of the Mutation
Linkage Mapping (https://www.gephebase.org/search-criteria?/and+Experimental Evidence=%5ELinkage Mapping%23gephebase-summary-title)	Experimental Evidence
The Pib gene for rice blast resistance belongs to the nucleotide binding and leucine-rich repeat class of plant disease resistance genes. (1999) (https://pubmed.ncbi.nlm.nih.gov/10417726)	Main Reference
Wang ZX; Yano M; Yamanouchi U; Iwamoto M; Monna L; Hayasaka H; Katayose Y; Sasaki T	Authors
Rice blast, caused by the fungal pathogen Magnaporthe grisea, is one of the most serious diseases of rice. Here we describe the isolation and characterization of Pib, one of the rice blast resistance genes. The Pib gene was isolated by a map-based cloning strategy. The deduced amino acid sequence of the Pib gene product contains a nucleotide binding site (NBS) and leucine-rich repeats (LRRs); thus, Pib is a member of the NBS-LRR class of plant disease resistance genes. Interestingly, a duplication of the kinase 1a, 2 and 3a motifs of the NBS region was found in the N-terminal half of the Pib protein. In addition, eight cysteine residues are clustered in the middle of the LRRs, a feature which has not been reported for other R genes. Pib gene expression was induced upon altered environmental conditions, such as altered temperatures and darkness.	Abstract
	Additional References

RELATED GEPHE

15 (Pi-ta, Pi2 (Nbs4-Pi2), Pi36, Pi37, Pi5-1 + Pi5-2 cluster, Pi9 (= Nbs2-Pi9), Pid3, PigmR, Pikm1-TS + Pikm2-TS cluster, Pit, Piz-t, SLB1/2, Xa1, Xa21, Xa26) (https://www.gephebase.org/search-criteria?/or+Taxon ID=%5E4530%5E/and+Trait=Pathogen resistance/and+groupHaplotypes=true%23gephebase-summary-title)	Related Genes
No matches found.	Related Haplotypes

EXTERNAL LINKS

COMMENTS

@GxE