

GEPHE SUMMARY

Pib (https://www.gephebase.org/search-criteria?/and+Gene Gephebase=~Pib~#gephebase-summary-title)	Gephebase Gene	GepheID
	GP00000882	
	Entry Status	Martin
Published		Main curator

PHENOTYPIC CHANGE

Physiology (https://www.gephebase.org/search-criteria?/and+Trait Category=~Physiology~#gephebase-summary-title)	Trait Category	
	Trait	
	Pathogen resistance (https://www.gephebase.org/search-criteria?/and+Trait=~Pathogen resistance~#gephebase-summary-title)	
Oryza sativa - blast susceptible Nipponbare	Trait State in Taxon A	
	Trait State in Taxon B	
	Oryza sativa - blast resistant Gumei2	
Data not curated	Ancestral State	
	Taxonomic Status	
	Domesticated (https://www.gephebase.org/search-criteria?/and+Taxonomic Status=~Domesticated~#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
	Common Name		Common Name
	rice	rice	
rice; red rice; Oryza sativa L.	Synonyms		Synonyms
	rice; red rice; Oryza sativa L.	rice; red rice; Oryza sativa L.	
	Rank		Rank
species	Lineage	species	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)	NCBI Taxonomy ID	Oryza () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4527)	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?
Yes	Taxon A Description	Yes	Taxon B Description
	Oryza sativa - blast susceptible Nipponbare	Oryza sativa - blast resistant Gumei2	

GENOTYPIC CHANGE

Pi-b	Generic Gene Name	UniProtKB Oryza sativa
	Synonyms	Q9SSY0 (http://www.uniprot.org/uniprot/Q9SSY0)
	Pib	GenebankID or UniProtKB
-	String	BAA76282 (https://www.ncbi.nlm.nih.gov/nuccore/BAA76282)
	Sequence Similarities	
	Belongs to the disease resistance NB-LRR family.	
GO:0043531 : ADP binding (https://www.ebi.ac.uk/QuickGO/term/GO:0043531)	GO - Molecular Function	
	GO - Biological Process	
	-	
-	GO - Cellular Component	
	-	
	Unknown (https://www.gephebase.org/search-criteria?/and+Presumptive Null=~Unknown~#gephebase-summary-title)	Presumptive Null

Unknown (https://www.gephebase.org/search-criteria?/and+Molecular+Type=~Unknown~#gephebase-summary-title)	Molecular Type
Unknown (https://www.gephebase.org/search-criteria?/and+Aberration+Type=~Unknown~#gephebase-summary-title)	Aberration Type
unknown	Molecular Details of the Mutation
Linkage Mapping (https://www.gephebase.org/search-criteria?/and+Experimental+Evidence=~Linkage+Mapping~#gephebase-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=~4530~/and+Trait=Pathogen+resistance/and+groupHaplotypes=true#gephebase-summary-title)	Related Genes
No matches found.	Related Haplotypes

EXTERNAL LINKS

COMMENTS

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