

	Gephebase Gene	GepheID
RPS2 (<a +rps2+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=">https://www.gephebase.org/search-criteria?/and+Gene+Gephebase="+RPS2+"#gephebase-summary-title)	GP00001011	Main curator
Published	Entry Status	Martin

Physiology (#gephebase-summary-title)		Trait Category	
Pathogen resistance (#gephebase-summary-title)		Trait	
Arabidopsis thaliana- Col0 - resistant		Trait State in Taxon A	
Arabidopsis thaliana (sensitive)		Trait State in Taxon B	
Taxon A		Ancestral State	
Intraspecific (#gephebase-summary-title)		Taxonomic Status	
Taxon A		Taxon B	
Arabidopsis thaliana (#gephebase-summary-title)	Latin Name	Arabidopsis thaliana (#gephebase-summary-title)	Latin Name
thale cress	Common Name	thale cress	Common Name
thale cress; mouse-ear cress; thale-cress; Arabidopsis thaliana (L.) Heynh.; Arabidopsis thaliana (thale cress); Arabidopsis_thaliana; Arbisopsis thaliana; thale kress	Synonyms	thale cress; mouse-ear cress; thale-cress; Arabidopsis thaliana (L.) Heynh.; Arabidopsis thaliana (thale cress); Arabidopsis_thaliana; Arbisopsis thaliana; thale kress	Synonyms
species	Rank	species	Rank
cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; rosids; malvids; Brassicales; Brassicaceae; Camelineae; Arabidopsis	Lineage	cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; rosids; malvids; Brassicales; Brassicaceae; Camelineae; Arabidopsis	Lineage
Arabidopsis () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3701)	Parent	Arabidopsis () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3701)	Parent
3702 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3702)	NCBI Taxonomy ID	3702 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3702)	NCBI Taxonomy ID
is Taxon A an Intraspecies?		is Taxon B an Intraspecies?	
Yes		Yes	
Arabidopsis thaliana- Col0 - resistant	Taxon A Description	Arabidopsis thaliana (sensitive)	Taxon B Description

Generic Gene Name	UniProtKB Arabidopsis thaliana
RPS2	Q42484 (http://www.uniprot.org/uniprot/Q42484)
DISEASE RESISTANCE PROTEIN RPS2; F20B18.200; F20B18_200; RESISTANT TO P. SYRINGAE 2; At4g26090	GenebankID or UniProtKB AF487806 (https://www.ncbi.nlm.nih.gov/nuccore/AF487806)
String 3702.AT4G26090.1 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=3702.AT4G26090.1)	
Sequence Similarities	
Belongs to the disease resistance NB-LRR family.	
GO - Molecular Function GO:0005524 : ATP binding (https://www.ebi.ac.uk/QuickGO/term/GO:0005524) GO:0043531 : ADP binding (https://www.ebi.ac.uk/QuickGO/term/GO:0043531)	
GO - Biological Process	

GO:0006952 : defense response (<https://www.ebi.ac.uk/QuickGO/term/GO:0006952>)
GO:0042742 : defense response to bacterium (<https://www.ebi.ac.uk/QuickGO/term/GO:0042742>)
GO:0009626 : plant-type hypersensitive response (<https://www.ebi.ac.uk/QuickGO/term/GO:0009626>)
GO:0016045 : detection of bacterium (<https://www.ebi.ac.uk/QuickGO/term/GO:0016045>)

GO - Cellular Component

GO:0005886 : plasma membrane (<https://www.ebi.ac.uk/QuickGO/term/GO:0005886>)
GO:0005737 : cytoplasm (<https://www.ebi.ac.uk/QuickGO/term/GO:0005737>)

Yes (https://www.gephebase.org/search-criteria?/and+Presumptive Null=~Yes~#gephebase-summary-title)	Presumptive Null
Coding (https://www.gephebase.org/search-criteria?/and+Molecular Type=~Coding~#gephebase-summary-title)	Molecular Type
Insertion (https://www.gephebase.org/search-criteria?/and+Aberration Type=~Insertion~#gephebase-summary-title)	Aberration Type
10-99 bp	Insertion Size
10bp insertion close to the 5’ end causing a frameshift	Molecular Details of the Mutation
Linkage Mapping (https://www.gephebase.org/search-criteria?/and+Experimental Evidence=~Linkage Mapping~#gephebase-summary-title)	Experimental Evidence
The A. thaliana disease resistance gene RPS2 encodes a protein containing a nucleotide-binding site and leucine-rich repeats. (1994) (https://pubmed.ncbi.nlm.nih.gov/7923358)	Main Reference
Mindrinós M; Katagiri F; Yu GL; Ausubel FM	Authors
In plants, resistance to a pathogen is frequently correlated with a genetically defined interaction between a plant resistance gene and a corresponding pathogen avirulence gene. A simple model explains these gene-for-gene interactions: avirulence gene products generate signals (ligands), and resistance genes encode cognate receptors. The A. thaliana RPS2 gene confers resistance to the bacterial pathogen P. syringae carrying the avirulence gene avrRpt2. A map-based positional cloning strategy was used to identify RPS2. The identification of RPS2 was verified using a newly developed transient assay for RPS2 function and by genetic complementation in transgenic plants. RPS2 encodes a novel 105 kDa protein containing a leucine zipper, a nucleotide-binding site, and 14 imperfect leucine-rich repeats.	Abstract
	Additional References

RELATED GEPHE

20 (ACD6 = ACCELERATED CELL DEATH 6, ERECTA, RAC1, Resistance related Kinase 1 (RKS1), RLM1, RLM2 cluster, RLM3, RPM1, RPP1-WsA, RPP1-WsB, RPP1-WsC, RPP13, RPP2A-RPP2B, RPP4, RPP5, RPP8, RPS4, RPS5, RRS1, WRR4) (https://www.gephebase.org/search-criteria?/or+Taxon ID=~3702~/and+Trait=Pathogen resistance/and+groupHaplotypes=true#gephebase-summary-title)	Related Genes
1 (https://www.gephebase.org/search-criteria?/or+Gene Gephebase=~RPS2~/and+Taxon ID=~3702~/or+Gene Gephebase=~RPS2~/and+Taxon ID=~3702~#gephebase-summary-title)	Related Haplotypes

EXTERNAL LINKS

COMMENTS