

GEPHE SUMMARY

<p>RPP1-WsA (#gephebase-summary-title)</p> <p>Published</p>	<p>Gephebase Gene</p> <p>Entry Status</p>	<p>GP00001002</p> <p>Martin</p>	<p>GepheID</p> <p>Main curator</p>
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PHENOTYPIC CHANGE

<p>Physiology (#gephebase-summary-title)</p> <p>Pathogen resistance (#gephebase-summary-title)</p> <p>Arabidopsis thaliana- Col0 - resistant</p> <p>Arabidopsis thaliana- Ws0 - sensitive</p> <p>Data not curated</p> <p>Intraspecific (#gephebase-summary-title)</p>	<p>Trait Category</p> <p>Trait</p> <p>Trait State in Taxon A</p> <p>Trait State in Taxon B</p> <p>Ancestral State</p> <p>Taxonomic Status</p>	<p>Arabidopsis thaliana (#gephebase-summary-title)</p> <p>thale cress</p> <p>thale cress; mouse-ear cress; thale-cress; Arabidopsis thaliana (L.) Heynh.; Arabidopsis thaliana (thale cress); Arabidopsis_thaliana; Arbisopsis thaliana; thale kress</p> <p>species</p> <p>cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; rosids; malvids; Brassicales; Brassicaceae; Camelineae; Arabidopsis</p> <p>Arabidopsis () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3701)</p> <p>3702 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3702)</p> <p>is Taxon A an Intraspecies?</p> <p>Yes</p> <p>Arabidopsis thaliana- Col0 - resistant</p>	<p>Taxon A</p> <p>Latin Name</p> <p>Common Name</p> <p>Synonyms</p> <p>Rank</p> <p>Lineage</p> <p>Parent</p> <p>NCBI Taxonomy ID</p> <p>is Taxon A an Intraspecies?</p> <p>Taxon A Description</p>	<p>Arabidopsis thaliana (#gephebase-summary-title)</p> <p>thale cress</p> <p>thale cress; mouse-ear cress; thale-cress; Arabidopsis thaliana (L.) Heynh.; Arabidopsis thaliana (thale cress); Arabidopsis_thaliana; Arbisopsis thaliana; thale kress</p> <p>species</p> <p>cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; rosids; malvids; Brassicales; Brassicaceae; Camelineae; Arabidopsis</p> <p>Arabidopsis () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3701)</p> <p>3702 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3702)</p> <p>is Taxon B an Intraspecies?</p> <p>Yes</p> <p>Arabidopsis thaliana- Ws0 - sensitive</p>	<p>Taxon B</p> <p>Latin Name</p> <p>Common Name</p> <p>Synonyms</p> <p>Rank</p> <p>Lineage</p> <p>Parent</p> <p>NCBI Taxonomy ID</p> <p>is Taxon B an Intraspecies?</p> <p>Taxon B Description</p>
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GENOTYPIC CHANGE

<p>RPP1</p> <p>cog1; recognition of peronospora parasitica 1; At3g44480; F14L2_30</p> <p>3702.AT3G44480.1 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=3702.AT3G44480.1)</p> <p>-</p> <p>GO:0005524 : ATP binding (https://www.ebi.ac.uk/QuickGO/term/GO:0005524)</p> <p>GO:0043531 : ADP binding (https://www.ebi.ac.uk/QuickGO/term/GO:0043531)</p> <p>GO:0030275 : LRR domain binding (https://www.ebi.ac.uk/QuickGO/term/GO:0030275)</p> <p>GO - Biological Process</p>	<p>Generic Gene Name</p> <p>Synonyms</p> <p>String</p> <p>Sequence Similarities</p> <p>GO - Molecular Function</p>	<p>F4J339 (http://www.uniprot.org/uniprot/F4J339)</p> <p>CP002686 (https://www.ncbi.nlm.nih.gov/nuccore/CP002686)</p> <p>UniProtKB Arabidopsis thaliana</p> <p>GenebankID or UniProtKB</p>
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GO:0006952 : defense response (<https://www.ebi.ac.uk/QuickGO/term/GO:0006952>)
GO:0007165 : signal transduction (<https://www.ebi.ac.uk/QuickGO/term/GO:0007165>)
GO:0009817 : defense response to fungus, incompatible interaction
(<https://www.ebi.ac.uk/QuickGO/term/GO:0009817>)
GO:0002239 : response to oomycetes
(<https://www.ebi.ac.uk/QuickGO/term/GO:0002239>)

GO - Cellular Component

GO:0005886 : plasma membrane (<https://www.ebi.ac.uk/QuickGO/term/GO:0005886>)
GO:0000139 : Golgi membrane (<https://www.ebi.ac.uk/QuickGO/term/GO:0000139>)
GO:0005789 : endoplasmic reticulum membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0005789>)

Unknown (<https://www.gephebase.org/search-criteria?/and+Presumptive Null=^Unknown^#gephebase-summary-title>) Presumptive Null
Coding (<https://www.gephebase.org/search-criteria?/and+Molecular Type=^Coding^#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

Three genes of the Arabidopsis RPP1 complex resistance locus recognize distinct Peronospora parasitica avirulence determinants. (1998) (<https://pubmed.ncbi.nlm.nih.gov/9811793>) Main Reference
Botella MA; Parker JE; Frost LN; Bittner-Eddy PD; Beynon JL; Daniels MJ; Holub EB; Jones JD Authors

Plant resistance (R) genes have evolved specific recognition capabilities in defense against pathogens. The evolution of R gene function and maintenance of R gene diversity within a plant species are therefore of great interest. In the Arabidopsis accession Wassilewskija, the RPP1 region on chromosome 3 contains four genetically linked recognition specificities, conditioning resistance to different isolates of the biotrophic oomycete Peronospora parasitica (downy mildew). We show that three of four tightly linked genes in this region, designated RPP1-WsA, RPP1-WsB, and RPP1-WsC, encode functional products of the NBS-LRR (nucleotide binding site-leucine-rich repeat) R protein class. They possess a TIR (Toll, interleukin-1, resistance) domain that is characteristic of certain other NBS-LRR-type R proteins, but in addition, they have unique hydrophilic or hydrophobic N termini. Together, the three RPP1 genes account for the spectrum of resistance previously assigned to the RPP1 region and thus comprise a complex R locus. The distinct but partially overlapping resistance capabilities conferred by these genes are best explained by the hypothesis that each recognizes a different pathogen avirulence determinant. We present evidence suggesting that the RPP genes at this locus are subject to the same selective forces that have been demonstrated for structurally different LRR-type R genes.

Additional References

RELATED GEPHE

20 (ACD6 = ACCELERATED CELL DEATH 6, ERECTA, RAC1, Resistance related Kinase 1 (RKS1), RLM1, RLM2 cluster, RLM3, RPM1, RPP1-WsB, RPP1-WsC, RPP13, RPP2A-RPP2B, RPP4, RPP5, RPP8, RPS2, 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

No matches found.

Related Haplotypes

EXTERNAL LINKS

COMMENTS

Cluster of paralogous genes