

GEPHE SUMMARY

<p>AT5G41740/AT5G41750 (https://www.gephebase.org/search-criteria?/and+Gene Gephebase=[^]AT5G41740/AT5G41750[^]#gephebase-summary-title)</p> <p>Published</p>	<p>Gephebase Gene</p> <p>Entry Status</p>	<p>GP00000105</p> <p>Martin</p>	<p>GepheID</p> <p>Main curator</p>
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PHENOTYPIC CHANGE

<p>Physiology (https://www.gephebase.org/search-criteria?/and+Trait Category=[^]Physiology[^]#gephebase-summary-title)</p>		<p>Trait Category</p>		
<p>Hybrid incompatibility (auto-immune necrosis) (https://www.gephebase.org/search-criteria?/and+Trait =[^]Hybrid incompatibility (auto-immune necrosis)[^]#gephebase-summary-title)</p>		<p>Trait</p>		
<p>Arabidopsis thaliana- Uk1</p>		<p>Trait State in Taxon A</p>		
<p>Arabidopsis thaliana- Uk3</p>		<p>Trait State in Taxon B</p>		
<p>Data not curated</p>		<p>Ancestral State</p>		
<p>Intraspecific (https://www.gephebase.org/search-criteria?/and+Taxonomic Status=[^]Intraspecific[^]#gephebase-summary-title)</p>		<p>Taxonomic Status</p>		
<p>Taxon A</p>	<p>Latin Name</p>	<p>Taxon B</p>	<p>Latin Name</p>	
<p>Arabidopsis thaliana (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=[^]Arabidopsis thaliana[^]#gephebase-summary-title)</p>	<p>Arabidopsis thaliana (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=[^]Arabidopsis thaliana[^]#gephebase-summary-title)</p>	<p>Arabidopsis thaliana (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=[^]Arabidopsis thaliana[^]#gephebase-summary-title)</p>	<p>Arabidopsis thaliana (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=[^]Arabidopsis thaliana[^]#gephebase-summary-title)</p>	
<p>thale cress</p>	<p>thale cress</p>	<p>thale cress</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>thale cress; mouse-ear cress; thale-cress; Arabidopsis thaliana (L.) Heynh.; Arabidopsis thaliana (thale cress); Arabidopsis...thaliana; Arbisopsis thaliana; thale kress</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>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>species</p>	<p>species</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>cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; rosids; malvids; Brassicales; Brassicaceae; Camelineae; Arabidopsis</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>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>Arabidopsis () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3701)</p>	<p>Arabidopsis () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3701)</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>3702 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3702)</p>	<p>3702 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3702)</p>	<p>3702 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3702)</p>	
<p>Yes</p>	<p>is Taxon A an Intraspecies?</p>	<p>Yes</p>	<p>is Taxon B an Intraspecies?</p>	
<p>Arabidopsis thaliana- Uk1</p>	<p>Taxon A Description</p>	<p>Arabidopsis thaliana- Uk3</p>	<p>Taxon B Description</p>	

GENOTYPIC CHANGE

<p>MUF8.2</p>	<p>Generic Gene Name</p>	<p>F4JY14 (http://www.uniprot.org/uniprot/F4JY14)</p>	<p>UniProtKB Arabidopsis thaliana</p>
<p>MUF8.2; MUF8_2; At5g41740</p>	<p>Synonyms</p>	<p>834177 (https://www.ncbi.nlm.nih.gov/nuccore/834177)</p>	<p>GenebankID or UniProtKB</p>
<p>3702.AT5G41740.2 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=3702.AT5G41740.2)</p>	<p>String</p>		
<p>-</p>	<p>Sequence Similarities</p>		
<p>GO:0043531 : ADP binding (https://www.ebi.ac.uk/QuickGO/term/GO:0043531)</p>	<p>GO - Molecular Function</p>		
<p>GO:0007165 : signal transduction (https://www.ebi.ac.uk/QuickGO/term/GO:0007165)</p>	<p>GO - Biological Process</p>		

-		Presumptive Null
Unknown (<a +unknown^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Presumptive Null=">https://www.gephebase.org/search-criteria?/and+Presumptive Null="+Unknown^#gephebase-summary-title)		Molecular Type
Unknown (<a +unknown^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Molecular Type=">https://www.gephebase.org/search-criteria?/and+Molecular Type="+Unknown^#gephebase-summary-title)		Aberration Type
Unknown (<a +unknown^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Aberration Type=">https://www.gephebase.org/search-criteria?/and+Aberration Type="+Unknown^#gephebase-summary-title)		Molecular Details of the Mutation
unknown		Experimental Evidence
Linkage Mapping (<a +linkage="" href="https://www.gephebase.org/search-criteria?/and+Experimental Evidence=" mapping^#gephebase-summary-title"="">https://www.gephebase.org/search-criteria?/and+Experimental Evidence="+Linkage Mapping^#gephebase-summary-title)		Main Reference
Autoimmune response as a mechanism for a Dobzhansky-Muller-type incompatibility syndrome in plants. (2007) (https://pubmed.ncbi.nlm.nih.gov/17803357)		Authors
Bombliès K; Lempe J; Epple P; Warthmann N; Lanz C; Dangl JL; Weigel D		Abstract
Epistatic interactions between genes are a major factor in evolution. Hybrid necrosis is an example of a deleterious phenotype caused by epistatic interactions that is observed in many intra- and interspecific plant hybrids. A large number of hybrid necrosis cases share phenotypic similarities, suggesting a common underlying mechanism across a wide range of plant species. Here, we report that approximately 2% of intraspecific crosses in <i>Arabidopsis thaliana</i> yield F1 progeny that express necrosis when grown under conditions typical of their natural habitats. We show that several independent cases result from epistatic interactions that trigger autoimmune-like responses. In at least one case, an allele of an NB-LRR disease resistance gene homolog is both necessary and sufficient for the induction of hybrid necrosis, when combined with a specific allele at a second locus. The <i>A. thaliana</i> cases provide insights into the molecular causes of hybrid necrosis, and serve as a model for further investigation of intra- and interspecific incompatibilities caused by a simple epistatic interaction. Moreover, our finding that plant immune-system genes are involved in hybrid necrosis suggests that selective pressures related to host-pathogen conflict might cause the evolution of gene flow barriers in plants.		Additional References

RELATED GEPHE

2 (RPP1, SRF3) (<a +3702^="" and+grouphaplotypes='true#gephebase-summary-title"' and+trait="Hybrid" href="https://www.gephebase.org/search-criteria?/or+Taxon ID=" incompatibility="">https://www.gephebase.org/search-criteria?/or+Taxon ID="+3702^/and+Trait=Hybrid incompatibility/and+groupHaplotypes=true#gephebase-summary-title)	Related Genes
No matches found.	Related Haplotypes

EXTERNAL LINKS

COMMENTS

@Epistasis - Cluster of paralogous genes