

GEPHE SUMMARY

	Gephebase Gene	GephelD
Pl6 (#gephebase-summary-title)	GP00000896	Main curator
	Entry Status	Martin
Published		

PHENOTYPIC CHANGE

	Trait Category		
Physiology (#gephebase-summary-title)	Trait		
Pathogen resistance (#gephebase-summary-title)	Trait State in Taxon A		
Helianthus annuus - susceptible to Plasmopara halstedii	Trait State in Taxon B		
Helianthus annuus - resistant to Plasmopara halstedii	Ancestral State		
Taxon A		Taxonomic Status	
Domesticated (#gephebase-summary-title)			
Taxon A	Latin Name	Taxon B	Latin Name
Helianthus annuus (#gephebase-summary-title)	Helianthus annuus (#gephebase-summary-title)		
common sunflower	Common Name	common sunflower	Common Name
common sunflower; Helianthus annuus L.; Helianthus annua; Helianthus annus; Helianthus annuus8	Synonyms	common sunflower; Helianthus annuus L.; Helianthus annua; Helianthus annus; Helianthus annuus8	Synonyms
species	Rank	species	Rank
cellular organisms; Eukaryota; Viridiplanteae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; asterids; campanulids; Asterales; Asteraceae; Asteroideae; Heliantheae alliance; Heliantheae; Helianthus	Lineage	cellular organisms; Eukaryota; Viridiplanteae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; asterids; campanulids; Asterales; Asteraceae; Asteroideae; Heliantheae alliance; Heliantheae; Helianthus	Lineage
Helianthus () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4231)	Parent	Helianthus () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4231)	Parent
4232 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4232)	NCBI Taxonomy ID	4232 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4232)	NCBI Taxonomy ID
No	is Taxon A an Infraspecies?	Yes	is Taxon B an Infraspecies?
			Taxon B Description
			Helianthus annuus - resistant to Plasmopara halstedii

GENOTYPIC CHANGE

-	Generic Gene Name	UniProtKB Helianthus annuus
-	Synonyms	GenebankID or UniProtKB
-	String	
-	Sequence Similarities	
-	GO - Molecular Function	
GO:0043531 : ADP binding (https://www.ebi.ac.uk/QuickGO/term/GO:0043531)		
GO - Biological Process		
GO:0007165 : signal transduction (https://www.ebi.ac.uk/QuickGO/term/GO:0007165)		
GO - Cellular Component		
GO:0016021 : integral component of membrane (https://www.ebi.ac.uk/QuickGO/term/GO:0016021)		

Unknown (#gephebase-summary-title)	Presumptive Null
Coding (#gephebase-summary-title)	Molecular Type
Unknown (#gephebase-summary-title)	Aberration Type
unknown ; cluster of several R-protein coding genes; of which only one is expressed	Molecular Details of the Mutation
Linkage Mapping (#gephebase-summary-title)	Experimental Evidence
Positional cloning of a candidate gene for resistance to the sunflower downy mildew, <i>Plasmopara halstedii</i> race 300. (2013) (https://pubmed.ncbi.nlm.nih.gov/23052021)	Main Reference
Franchel J; Bouzidi MF; Bronner G; Vear F; Nicolas P; Mouzeyar S	Authors
The resistance of sunflower to <i>Plasmopara halstedii</i> is conferred by major resistance genes denoted Pl. Previous genetic studies indicated that the majority of these genes are clustered on linkage groups 8 and 13. The Pl6 locus is one of the main clusters to have been identified, and confers resistance to several <i>P. halstedii</i> races. In this study, a map-based cloning strategy was implemented using a large segregating F2 population to establish a fine physical map of this cluster. A marker derived from a bacterial artificial chromosome (BAC) clone was found to be very tightly linked to the gene conferring resistance to race 300, and the corresponding BAC clone was sequenced and annotated. It contains several putative genes including three toll-interleukin receptor-nucleotide binding site-leucine rich repeats (TIR-NBS-LRR) genes. However, only one TIR-NBS-LRR appeared to be expressed, and thus constitutes a candidate gene for resistance to <i>P. halstedii</i> race 300.	Abstract
	Additional References

RELATED GEPHE

No matches found.	Related Genes
No matches found.	Related Haplotypes

EXTERNAL LINKS

COMMENTS

Cluster of paralogous genes