

GEPHE SUMMARY

| | | | |
|---|----------------|------------|--------------|
| | Gephebase Gene | | GepheID |
| Pl6 (<a +pl6+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=">https://www.gephebase.org/search-criteria?/and+Gene+Gephebase="+Pl6+"#gephebase-summary-title) | | GP00000896 | |
| | Entry Status | Martin | Main curator |
| Published | | | |

PHENOTYPIC CHANGE

| | | | |
|---|-----------------------------|---|-----------------------------|
| | Trait Category | | |
| Physiology (<a +physiology+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait+Category=">https://www.gephebase.org/search-criteria?/and+Trait+Category="+Physiology+"#gephebase-summary-title) | | | |
| | Trait | | |
| Pathogen resistance (<a +pathogen+resistance+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait=">https://www.gephebase.org/search-criteria?/and+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 (<a +domesticated+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=">https://www.gephebase.org/search-criteria?/and+Taxonomic+Status="+Domesticated+"#gephebase-summary-title) | | | |
| Taxon A | | Taxon B | |
| | Latin Name | | Latin Name |
| Helianthus annuus (<a +helianthus+annuus+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Helianthus+annuus+"#gephebase-summary-title) | | Helianthus annuus (<a +helianthus+annuus+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Helianthus+annuus+"#gephebase-summary-title) | |
| | Common Name | | Common Name |
| common sunflower | | common sunflower | |
| | Synonyms | | Synonyms |
| common sunflower; Helianthus annuus L.; Helianthus annua; Helianthus annuus; Helianthus annuus8 | | common sunflower; Helianthus annuus L.; Helianthus annua; Helianthus annuus; Helianthus annuus8 | |
| | Rank | | Rank |
| species | | species | |
| | Lineage | | Lineage |
| cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; asterids; campanulids; Asterales; Asteraceae; Asteroideae; Heliantheae alliance; Heliantheae; Helianthus | | cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; asterids; campanulids; Asterales; Asteraceae; Asteroideae; Heliantheae alliance; Heliantheae; Helianthus | |
| | Parent | | Parent |
| Helianthus () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4231) | | Helianthus () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4231) | |
| | NCBI Taxonomy ID | | NCBI Taxonomy ID |
| 4232 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4232) | | 4232 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4232) | |
| | is Taxon A an Intraspecies? | | is Taxon B an Intraspecies? |
| No | | Yes | |
| | | | Taxon B Description |
| | | Helianthus annuus - resistant to Plasmopara halstedii | |

GENOTYPIC CHANGE

| | | | |
|--|-------------------------|--|-----------------------------|
| | Generic Gene Name | | UniProtKB Helianthus annuus |
| - | | F8R6K4 (http://www.uniprot.org/uniprot/F8R6K4) | |
| | Synonyms | | GenebankID or UniProtKB |
| - | | 0 | |
| | 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 (<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

Molecular Details of the Mutation

unknown ; cluster of several R-protein coding genes; of which only one is expressed

Experimental Evidence

Linkage Mapping (<https://www.gephebase.org/search-criteria?/and+Experimental Evidence=^Linkage Mapping^#gephebase-summary-title>)

Main Reference

Positional cloning of a candidate gene for resistance to the sunflower downy mildew, *Plasmopara halstedii* race 300. (2013) (<https://pubmed.ncbi.nlm.nih.gov/23052021>)

Authors

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Abstract

The resistance of sunflower to *Plasmopara halstedii* 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 *P. halstedii* 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 *P. halstedii* race 300.

Additional References

RELATED GEPHE

Related Genes

No matches found.

Related Haplotypes

No matches found.

EXTERNAL LINKS

COMMENTS

Cluster of paralogous genes