

GEPHE SUMMARY

	Gephebase Gene		GepheID
Hs1 = pro-1 (#gephebase-summary-title)		GP00000490	
	Entry Status	Martin	Main curator
Published			

PHENOTYPIC CHANGE

	Trait Category		
Physiology (#gephebase-summary-title)			
	Trait		
Pathogen resistance (parasite, nematodes) (nematodes) (https://www.gephebase.org/search-criteria?/and+Trait+Pathogen resistance (parasite, nematodes) (nematodes) #gephebase-summary-title)			
	Trait State in Taxon A		
Beta procumbens; Beta webbiana; Beta patellaris			
	Trait State in Taxon B		
Beta vulgaris - sensitive			
	Ancestral State		
Data not curated			
	Taxonomic Status		
Domesticated (#gephebase-summary-title)			
Taxon A		Taxon B	
	Latin Name		Latin Name
Patellifolia (#gephebase-summary-title)		Beta vulgaris (#gephebase-summary-title)	
	Common Name		Common Name
-		-	
	Synonyms		Synonyms
Patellifolia A.J.Scott, Ford-Lloyd & J.T.Williams, 1977		Beta altissima; beet; Beta altissima Steud.; Beta vulgaris L.	
	Rank		Rank
genus		species	
	Lineage		Lineage
cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; Caryophyllales; Chenopodiaceae; Betoideae		cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; Caryophyllales; Chenopodiaceae; Betoideae; Beta	
	Parent		Parent
Betoideae () - (Rank: subfamily) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=1804621)		Beta () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3554)	
319553 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=319553)	NCBI Taxonomy ID	161934 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=161934)	NCBI Taxonomy ID
	is Taxon A an Intraspecies?		is Taxon B an Intraspecies?
No		No	

GENOTYPIC CHANGE

	Generic Gene Name		UniProtKB Arabidopsis thaliana
HSPRO1		Q9LY61 (http://www.uniprot.org/uniprot/Q9LY61)	
	Synonyms		GenebankID or UniProtKB
At3g55840; F27K19.20		()	
	String		
3702.AT3G55840.1 (http://string-db.org/newstring_cgi/show_network_section.pl?identifier=3702.AT3G55840.1)			
	Sequence Similarities		
-			
	GO - Molecular Function		
GO:0046872 : metal ion binding (https://www.ebi.ac.uk/QuickGO/term/GO:0046872)			
GO:0020037 : heme binding (https://www.ebi.ac.uk/QuickGO/term/GO:0020037)			
	GO - Biological Process		
GO:0006952 : defense response (https://www.ebi.ac.uk/QuickGO/term/GO:0006952)			
GO:0019441 : tryptophan catabolic process to kynurenine (https://www.ebi.ac.uk/QuickGO/term/GO:0019441)			

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](https://www.gephebase.org/search-criteria?/and+Presumptive+Null=~Yes^#gephebase-summary-title))

Gene Loss ([https://www.gephebase.org/search-criteria?/and+Molecular Type=~Gene Loss^#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Molecular+Type=~Gene+Loss^#gephebase-summary-title))

Complex Change ([https://www.gephebase.org/search-criteria?/and+Aberration Type=~Complex Change^#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Aberration+Type=~Complex+Change^#gephebase-summary-title))

cDNA sequence lacking in genomic DNA

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

Positional cloning of a gene for nematode resistance in sugar beet. (1997) (<https://pubmed.ncbi.nlm.nih.gov/9012350>)

Cai D; Kleine M; Kifle S; Harloff HJ; Sandal NN; Marcker KA; Klein-Lankhorst RM; Salentijn EM; Lange W; Stiekema WJ; Wyss U; Grundler FM; Jung C

The Hs1(pro-1) locus confers resistance to the beet cyst nematode (*Heterodera schachtii* Schmidt), a major pest in the cultivation of sugar beet (*Beta vulgaris* L.). The Hs1(pro-1) gene was cloned with the use of genome-specific satellite markers and chromosomal break-point analysis. Expression of the corresponding complementary DNA in a susceptible sugar beet conferred resistance to infection with the beet cyst nematode. The native Hs1(pro-1) gene, expressed in roots, encodes a 282-amino acid protein with imperfect leucine-rich repeats and a putative membrane-spanning segment, features similar to those of disease resistance genes previously cloned from higher plants.

Presumptive Null

Molecular Type

Aberration Type

Molecular Details of the Mutation

Experimental Evidence

Main Reference

Authors

Abstract

Additional References

RELATED GEPHE

No matches found.

No matches found.

Related Genes

Related Haplotypes

EXTERNAL LINKS

COMMENTS