

GEPHE SUMMARY

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

PHENOTYPIC CHANGE

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

GENOTYPIC CHANGE

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

Gene Loss (<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>)

cDNA sequence lacking in genomic DNA

Linkage Mapping (<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