

GLABROUS1 (https://www.gephebase.org/search-criteria?/and+GeneGephebase=~GLABROUS1~#gephebase-summary-title)	Gephebase Gene	GP00000398	GepheID
Published	Entry Status	Martin	Main curator

Morphology (#Morphology #gephebase-summary-title)		Trait Category	
Trichome (leaves) (#gephebase-summary-title)		Trait	
Arabidopsis spp.		Trait State in Taxon A	
Arabidopsis spp.		Trait State in Taxon B	
Data not curated		Ancestral State	
Intraspecific (#gephebase-summary-title)		Taxonomic Status	
Taxon A		Taxon B	
Arabidopsis (#gephebase-summary-title)	Latin Name	Arabidopsis (#gephebase-summary-title)	Latin Name
-	Common Name	-	Common Name
Cardaminopsis; Arabidopsis (DC.) Heynh., 1842; Cardaminopsis Hayek	Synonyms	Cardaminopsis; Arabidopsis (DC.) Heynh., 1842; Cardaminopsis Hayek	Synonyms
genus	Rank	genus	Rank
cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; rosids; malvids; Brassicales; Brassicaceae; Camelineae	Lineage	cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; rosids; malvids; Brassicales; Brassicaceae; Camelineae	Lineage
Camelineae () - (Rank: tribe) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=980083)	Parent	Camelineae () - (Rank: tribe) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=980083)	Parent
3701 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3701)	NCBI Taxonomy ID	3701 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3701)	NCBI Taxonomy ID
No	is Taxon A an Intraspecies?	No	is Taxon B an Intraspecies?

GL1	Generic Gene Name	UniProtKB Arabidopsis thaliana
	Synonyms	GenebankID or UniProtKB
ATGL1; ATMYB0; GL1; GLABRA 1; myb domain protein 0; TRICHOME DIFFERENTIATION PROTEIN GL1; MYB0; At3g27920; K16N12.17		ABD65321 (https://www.ncbi.nlm.nih.gov/nuccore/ABD65321)
	String	
3702.AT3G27920.1 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=3702.AT3G27920.1)		
	Sequence Similarities	
-		
	GO - Molecular Function	
GO:0003700 : DNA-binding transcription factor activity (https://www.ebi.ac.uk/QuickGO/term/GO:0003700)		
GO:0043565 : sequence-specific DNA binding (https://www.ebi.ac.uk/QuickGO/term/GO:0043565)		
GO:0044212 : transcription regulatory region DNA binding (https://www.ebi.ac.uk/QuickGO/term/GO:0044212)		

GO:0003677 : DNA binding (<https://www.ebi.ac.uk/QuickGO/term/GO:0003677>)
GO - Biological Process

GO:0030154 : cell differentiation (<https://www.ebi.ac.uk/QuickGO/term/GO:0030154>)
GO:0009740 : gibberellic acid mediated signaling pathway (<https://www.ebi.ac.uk/QuickGO/term/GO:0009740>)
GO:0001708 : cell fate specification (<https://www.ebi.ac.uk/QuickGO/term/GO:0001708>)
GO:0009867 : jasmonic acid mediated signaling pathway (<https://www.ebi.ac.uk/QuickGO/term/GO:0009867>)
GO:0010026 : trichome differentiation (<https://www.ebi.ac.uk/QuickGO/term/GO:0010026>)
GO:0032880 : regulation of protein localization (<https://www.ebi.ac.uk/QuickGO/term/GO:0032880>)
GO:2000039 : regulation of trichome morphogenesis (<https://www.ebi.ac.uk/QuickGO/term/GO:2000039>)
GO:0048629 : trichome patterning (<https://www.ebi.ac.uk/QuickGO/term/GO:0048629>)
GO - Cellular Component

GO:0005634 : nucleus (<https://www.ebi.ac.uk/QuickGO/term/GO:0005634>)

	Presumptive Null
Unknown (https://www.gephebase.org/search-criteria?/and+Presumptive Null=~Unknown~#gephebase-summary-title)	
	Molecular Type
Unknown (https://www.gephebase.org/search-criteria?/and+Molecular Type=~Unknown~#gephebase-summary-title)	
	Aberration Type
Unknown (https://www.gephebase.org/search-criteria?/and+Aberration Type=~Unknown~#gephebase-summary-title)	
	Molecular Details of the Mutation
unknown	
	Experimental Evidence
Candidate Gene (https://www.gephebase.org/search-criteria?/and+Experimental Evidence=~Candidate Gene~#gephebase-summary-title)	
	Main Reference
Trichome distribution in Arabidopsis thaliana and its close relative Arabidopsis lyrata: molecular analysis of the candidate gene GLABROUS1. (2001) (https://pubmed.ncbi.nlm.nih.gov/11504855)	
	Authors
Hauser MT; Harr B; Schl��tterer C	
	Abstract
GLABROUS1 (GL1) belongs to the large family of MYB transcription factors and is known to play a central role in trichome initiation. We studied trichome distribution and the molecular variation of GL1 in 28 A. thaliana accessions. Trichome density on rosette leaves was highly variable among those accessions. On the molecular level, we detected substantial sequence variation in a 3-kb fragment which included the complete coding region of the GL1 locus (pi = 0.01). Phylogenetic analysis of GL1 indicates the presence of two diverged clades among 28 accessions. Using ANOVA, we show that the phenotypic variation in trichome density cannot be explained by the sequence divergence between the two phylogenetic lineages. Sequence analysis of wild-type Arabidopsis thaliana and Arabidopsis lyrata accessions indicates that all amino acid substitutions are located outside of the conserved helix-turn-helix DNA-binding domains R2 and R3. Using plants of A. thaliana and A. lyrata with either naturally occurring or ethyl methane sulfonate--induced glabrous phenotypes, we demonstrate that the last 14 C-terminal amino acids of the GL1 gene have no major impact on the initiation of trichomes.	
	Additional References
Gene, phenotype and function: GLABROUS1 and resistance to herbivory in natural populations of Arabidopsis lyrata. (2007) (https://pubmed.ncbi.nlm.nih.gov/17217357)	

RELATED GEPHE

	Related Genes
2 (AtMYC1, ETC2) (https://www.gephebase.org/search-criteria?/or+Taxon ID=~3701~/and+Trait=Trichome/and+groupHaplotypes=true#gephebase-summary-title)	
	Related Haplotypes
5 (https://www.gephebase.org/search-criteria?/or+Gene Gephebase=~GLABROUS1~/and+Taxon ID=~3701~/or+Gene Gephebase=~GLABROUS1~/and+Taxon ID=~3701~#gephebase-summary-title)	

EXTERNAL LINKS

COMMENTS