

GLABROUS1 (https://www.gephebase.org/search-criteria?/and+GeneGephebase=~GLABROUS1*#gephebase-summary-title)	Gephebase Gene	GP00001238	GepheID
Published	Entry Status	Arnout	Main curator

Morphology (#www.gephebase.org/search-criteria?/and+Trait+Category=~Morphology #gephebase-summary-title)		Trait Category	
Trichome density (leaf) (https://www.gephebase.org/search-criteria?/and+Trait=~Trichome density (leaf) #gephebase-summary-title)		Trait	
Arabidopsis thaliana- Colo		Trait State in Taxon A	
Arabidopsis thaliana Wil-2 and Est - Glabrous		Trait State in Taxon B	
Data not curated		Ancestral State	
Intraspecific (#www.gephebase.org/search-criteria?/and+Taxonomic Status=~Intraspecific #gephebase-summary-title)		Taxonomic Status	
Taxon A		Taxon B	
Arabidopsis thaliana (#www.gephebase.org/search-criteria?/and+Taxon and Synonyms=~Arabidopsis thaliana #gephebase-summary-title)	Latin Name	Arabidopsis thaliana (#www.gephebase.org/search-criteria?/and+Taxon and Synonyms=~Arabidopsis thaliana #gephebase-summary-title)	Latin Name
thale cress	Common Name	thale cress	Common Name
thale cress; mouse-ear cress; thale-cress; Arabidopsis thaliana (L.) Heynh.; Arabidopsis thaliana (thale cress); Arabidopsis_thaliana; Arbisopsis thaliana; thale kress	Synonyms	thale cress; mouse-ear cress; thale-cress; Arabidopsis thaliana (L.) Heynh.; Arabidopsis thaliana (thale cress); Arabidopsis_thaliana; Arbisopsis thaliana; thale kress	Synonyms
species	Rank	species	Rank
cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; rosids; malvids; Brassicales; Brassicaceae; Camelineae; Arabidopsis	Lineage	cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; rosids; malvids; Brassicales; Brassicaceae; Camelineae; Arabidopsis	Lineage
Arabidopsis () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3701)	Parent	Arabidopsis () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3701)	Parent
3702 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3702)	NCBI Taxonomy ID	3702 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=3702)	NCBI Taxonomy ID
is Taxon A an Intraspecies?		is Taxon B an Intraspecies?	
Yes		Yes	
Arabidopsis thaliana- Colo	Taxon A Description	Arabidopsis thaliana Wil-2 and Est	Taxon B Description

GL1	Generic Gene Name	UniProtKB Arabidopsis thaliana
	Synonyms	P27900 (http://www.uniprot.org/uniprot/P27900) 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>)

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>)
Deletion (<https://www.gephebase.org/search-criteria?/and+Aberration Type=~Deletion~#gephebase-summary-title>)
10-100 kb
gene loss: -4.7KB at position -948bp
Candidate Gene (<https://www.gephebase.org/search-criteria?/and+Experimental Evidence=~Candidate Gene~#gephebase-summary-title>)
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>)
Hauser MT; Harr B; Schl  tterer C

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.
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>)

RELATED GEPHE

2 (AtMYC1, ETC2) (<https://www.gephebase.org/search-criteria?/or+Taxon ID=~3702~/and+Trait=Trichome density/and+groupHaplotypes=true#gephebase-summary-title>)
4 (<https://www.gephebase.org/search-criteria?/or+Gene Gephebase=~GLABROUS1~/and+Taxon ID=~3702~/or+Gene Gephebase=~GLABROUS1~/and+Taxon ID=~3702~#gephebase-summary-title>)

EXTERNAL LINKS

COMMENTS

Based on previous mappings showing the involvement of GL1 locus on trichome density; complementation test with glabrous mutant

