

GEPHE SUMMARY

	Gephebase Gene	GephelD
Chalcone synthase D (CHS-D) (https://www.gephebase.org/search-criteria/?and+Gene)	GP00001460	
Gephebase=^Chalcone synthase D (CHS-D)^#gephebase-summary-title)		Main curator
Published	Entry Status	Prigent

PHENOTYPIC CHANGE

Trait Category		
Morphology (https://www.gephebase.org/search-criteria/?and+Trait)	Trait	
Category=Morphology^#gephebase-summary-title)		
Coloration (flower) (https://www.gephebase.org/search-criteria/?and+Trait=^Coloration)	Trait	
(flower)^#gephebase-summary-title)		
Common morning glory with white flower with variegated colored flakes and sectors (KK/VR-37 & KK/VR-40a & KK/VP-347 & YY/VP-SU2001 & KK/WR-321)	Trait State in Taxon A	
Common morning glory with stable white flower (KK/WP-3)	Trait State in Taxon B	
Taxon A	Ancestral State	
Taxonomic Status		
Intraspecific (https://www.gephebase.org/search-criteria/?and+Taxonomic)	Taxon A	Taxon B
Status=^Intraspecific^#gephebase-summary-title)	Latin Name	Latin Name
Ipomoea purpurea (https://www.gephebase.org/search-criteria/?and+Taxon+and+Synonyms=^Ipomoea+purpurea^#gephebase-summary-title)	Common Name	Common Name
common morning-glory	Synonyms	Synonyms
Convolvulus purpureus; Pharbitis purpurea; common morning-glory; Convolvulus purpureus L., 1762; Ipomoea purpurea (L.) Roth, 1787; Pharbitis purpurea (L.) Voigt, 1845; Pharbitis purpurea		Convolvulus purpureus; Pharbitis purpurea; common morning-glory; Convolvulus purpureus L., 1762; Ipomoea purpurea (L.) Roth, 1787; Pharbitis purpurea (L.) Voigt, 1845; Pharbitis purpurea
species	Rank	Rank
cellular organisms; Eukaryota; Viriplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphylophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; asterids; Iamiids; Solanales; Convolvulaceae; Ipomoeae; Ipomoea	Lineage	Lineage
Ipomoea () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4119)	Parent	Parent
4121 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4121)	NCBI Taxonomy ID	NCBI Taxonomy ID
is Taxon A an Infraspecies?		is Taxon B an Infraspecies?
Yes	Taxon A Description	Taxon B Description
Common morning glory with white flower with variegated colored flakes and sectors (KK/VR-37 & KK/VR-40a & KK/VP-347 & YY/VP-SU2001 & KK/WR-321)	Common morning glory with stable white flower (KK/WP-3)	

GENOTYPIC CHANGE

CHSD	Generic Gene Name	UniProtKB Ipomoea nil
CHSD; CHS-D	Synonyms	GenebankID or UniProtKB
-	String	
Belongs to the chalcone/stilbene synthases family.	Sequence Similarities	
GO:0016210 : naringenin-chalcone synthase activity (https://www.ebi.ac.uk/QuickGO/term/GO:0016210)	GO - Molecular Function	
	GO - Biological Process	

-	Presumptive Null
No (https://www.gephebase.org/search-criteria?/and+Presumptive Null=^No^#gephebase-summary-title)	Molecular Type
Unknown (https://www.gephebase.org/search-criteria?/and+Molecular Type=^Unknown^#gephebase-summary-title)	Aberration Type
Insertion (https://www.gephebase.org/search-criteria?/and+Aberration Type=^Insertion^#gephebase-summary-title)	Insertion Size
1-10 kb	Molecular Details of the Mutation
2 insertions of Tip100 in opposite orientation at different sites within the same intron	Experimental Evidence
Candidate Gene (https://www.gephebase.org/search-criteria?/and+Experimental Evidence=^Candidate Gene^#gephebase-summary-title)	Main Reference
Molecular characterization of the mutable flaked allele for flower variegation in the common morning glory. (1998) (https://pubmed.ncbi.nlm.nih.gov/9881157)	Authors
Habu Y; Hisatomi Y; Iida S	Abstract
The mutable flaked (or af) lines of the common morning glory bear white flowers with colored flakes and sectors. The af allele shows incomplete dominance. Plants in the heterozygous state A/af bear lightly colored flowers with intensely colored flakes and occasionally with white sectors. We showed that the mutable af allele is caused by insertion of a new transposable element, Tip100, into the CHS-D gene intron. Tip100 is 3.9 kb long and belongs to the Ac/Ds family. Although the timing and frequency of the flower variegation vary in different lines, they carry an identical mutable allele. We also noticed that a flaked subline, bearing variegated flowers, carries a Tip100 derivative, Tip100-1. The structure of Tip100-1 contains an additional 48 bp terminal sequence as tandem repeats and its integration site is identical to that of Tip100. Another line, with stable white flowers, is a double mutant carrying two copies of Tip100 in the CHS-D gene. These results are discussed with regard to the variegated phenotypes of flowers in various mutable lines.	Additional References

RELATED GEPHE

3 (bHLH2, flavonoid 3'-hydroxylase (F3'H), MYB1) (https://www.gephebase.org/search-criteria?/or+Taxon ID=^4121^/and+Trait=Coloration/and+groupHaplotypes=true#gephebase-summary-title)	Related Genes
1 (https://www.gephebase.org/search-criteria?/or+Gene Gephebase=^Chalcone synthase D (CHS-D)^/and+Taxon ID=^4121^/or+Gene Gephebase=^Chalcone synthase D (CHS-D)^/and+Taxon ID=^4121^#gephebase-summary-title)	Related Haplotypes

EXTERNAL LINKS

COMMENTS

this allele with 2 @TE is supposed to derive from an allele with 1 TE. coding or regulatory mutation