

GEPHE SUMMARY

	Gephebase Gene		GepheID
Chalcone synthase D (CHS-D) (https://www.gephebase.org/search-criteria?/and+GeneGephebase=~Chalcone synthase D (CHS-D)^#gephebase-summary-title)	GP00001459		
	Entry Status	Prigent	Main curator
Published			

PHENOTYPIC CHANGE

	Trait Category		
Morphology (https://www.gephebase.org/search-criteria?/and+TraitCategory=~Morphology^#gephebase-summary-title)		Trait	
Coloration (flower) (https://www.gephebase.org/search-criteria?/and+Trait=~Coloration(flower)^#gephebase-summary-title)			
	Trait State in Taxon A		
Common morning glory with colored flower (YO/FR-34 & KK/FR-35 & KK/FP-36 & YO/FP-39)		Trait State in Taxon B	
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)			
	Ancestral State		
Taxon A			
	Taxonomic Status		
Intraspecific (https://www.gephebase.org/search-criteria?/and+TaxonomicStatus=~Intraspecific^#gephebase-summary-title)			
Taxon A		Taxon B	
	Latin Name		Latin Name
Ipomoea purpurea (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=~Ipomoea purpurea^#gephebase-summary-title)		Ipomoea purpurea (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=~Ipomoea purpurea^#gephebase-summary-title)	
	Common Name		Common Name
common morning-glory		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; Pharbits purpurea		Convolvulus purpureus; Pharbitis purpurea; common morning-glory; Convolvulus purpureus L., 1762; Ipomoea purpurea (L.) Roth, 1787; Pharbitis purpurea (L.) Voigt, 1845; Pharbits purpurea	
	Rank		Rank
species		species	
	Lineage		Lineage
cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; asterids; lamiids; Solanales; Convolvulaceae; Ipomoeae; Ipomoea		cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; asterids; lamiids; Solanales; Convolvulaceae; Ipomoeae; Ipomoea	
	Parent		Parent
Ipomoea () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4119)		Ipomoea () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4119)	
	NCBI Taxonomy ID		NCBI Taxonomy ID
4121 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4121)		4121 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4121)	
	is Taxon A an Intraspecies?		is Taxon B an Intraspecies?
Yes		Yes	
	Taxon A Description		Taxon B Description
Common morning glory with colored flower (YO/FR-34 & KK/FR-35 & KK/FP-36 & YO/FP-39)		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)	

GENOTYPIC CHANGE

	Generic Gene Name		UniProtKB Ipomoea nil
CHSD		O22045 (http://www.uniprot.org/uniprot/O22045)	
	Synonyms		GenebankID or UniProtKB
CHSD; CHS-D		AB004905 (https://www.ncbi.nlm.nih.gov/nuccore/AB004905)	
	String		
-			
	Sequence Similarities		
Belongs to the chalcone/stilbene synthases family.			
	GO - Molecular Function		
GO:0016210 : naringenin-chalcone synthase activity (https://www.ebi.ac.uk/QuickGO/term/GO:0016210)			

GO:0009813 : flavonoid biosynthetic process
(<https://www.ebi.ac.uk/QuickGO/term/GO:0009813>)

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No (<https://www.gephebase.org/search-criteria?/and+Presumptive Null=^No^#gephebase-summary-title>)

Unknown (<https://www.gephebase.org/search-criteria?/and+Molecular Type=^Unknown^#gephebase-summary-title>)

Insertion (<https://www.gephebase.org/search-criteria?/and+Aberration Type=^Insertion^#gephebase-summary-title>)

1-10 kb

insertion of a 3.9kb long transposable element Tip100 in intron

Candidate Gene (<https://www.gephebase.org/search-criteria?/and+Experimental Evidence=^Candidate Gene^#gephebase-summary-title>)

Molecular characterization of the mutable flaked allele for flower variegation in the common morning glory. (1998) (<https://pubmed.ncbi.nlm.nih.gov/9881157>)

Habu Y; Hisatomi Y; Iida S

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.

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>)

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](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))

EXTERNAL LINKS

COMMENTS

@TE; coding or regulatory mutation