

GEPHE SUMMARY

Gephebase Gene

MADS AFFECTING FLOWERING 2 (MAF2)

Entry Status

Published

GepheID

GP00000561

Main curator

Martin

PHENOTYPIC CHANGE

Trait Category

Physiology

Trait

Flowering time

Trait State in Taxon A

Arabidopsis thaliana

Trait State in Taxon B

Arabidopsis thaliana

Ancestral State

Data not curated

Taxonomic Status

Intraspecific

Taxon A

Latin Name

Arabidopsis thaliana

Common Name

thale cress

Synonyms

thale cress; mouse-ear cress; thale-cress; *Arabidopsis thaliana* (L.) Heynh.; *Arabidopsis thaliana* (thale cress); *Arabidopsis_thaliana*; *Arbisopsis thaliana*; thale kress

Rank

species

Lineage

cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; rosids; malvids; Brassicales; Brassicaceae; Camelineae; *Arabidopsis*

Parent

Arabidopsis () - (Rank: genus)

NCBI Taxonomy ID

3702

is Taxon A an Intraspecies?

No

Taxon B

Latin Name

Arabidopsis thaliana

Common Name

thale cress

Synonyms

thale cress; mouse-ear cress; thale-cress; *Arabidopsis thaliana* (L.) Heynh.; *Arabidopsis thaliana* (thale cress); *Arabidopsis_thaliana*; *Arbisopsis thaliana*; thale kress

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Parent

Arabidopsis () - (Rank: genus)

NCBI Taxonomy ID

3702

is Taxon B an Intraspecies?

No

GENOTYPIC CHANGE

Generic Gene Name

MAF2

Synonyms

-

String

-

Sequence Similarities

-

GO - Molecular Function

GO:0046983 : protein dimerization activity

GO:0000977 : RNA polymerase II regulatory region sequence-specific DNA binding

GO - Biological Process

GO:0045944 : positive regulation of transcription by RNA polymerase II

GO - Cellular Component

GO:0016021 : integral component of membrane

GO:0005634 : nucleus

Presumptive Null

UniProtKB *Arabidopsis thaliana*

Q84J38

GenebankID or UniProtKB

AY231443

No

Molecular Type
Cis-regulatory

Aberration Type
Insertion

Insertion Size
unknown

Molecular Details of the Mutation
Insertion alleles - several

Experimental Evidence
Linkage Mapping

Main Reference
Natural diversity in flowering responses of *Arabidopsis thaliana* caused by variation in a tandem gene array. (2010)

Authors
Rosloski SM; Jali SS; Balasubramanian S; Weigel D; Grbic V

Abstract
Tandemly arrayed genes that belong to gene families characterize genomes of many organisms. Gene duplication and subsequent relaxation of selection can lead to the establishment of paralogous cluster members that may evolve along different trajectories. Here, we report on the structural variation in MADS AFFECTING FLOWERING 2 (MAF2) gene, one member of the tandemly duplicated cluster of MADS-box-containing transcription factors in *Arabidopsis thaliana*. The altered gene structure at the MAF2 locus is present as a moderate-frequency polymorphism in *Arabidopsis* and leads to the extensive diversity in transcript patterns due to alternative splicing. Rearrangements at the MAF2 locus are associated with an early flowering phenotype in BC(5) lines. The lack of suppression of flowering time in a MAF2-insertion line expressing the MAF2-specific artificial miRNA suggests that these MAF2 variants are behaving as loss-of-function alleles. The variation in gene architecture is also associated with segregation distortion, which may have facilitated the spread and the establishment of the corresponding alleles throughout the Eurasian range of the *A. thaliana* population.

Additional References

RELATED GEPHE

Related Genes
12 (AGAMOUS-LIKE 50, Cryptochrome 2 (CRY2) EDI allele, EARLY FLOWERING 3(ELF3), FLC (Flowering Locus C), FLM (MAF1), Flowering locus T (FT), Frigida (FRI), Frigida like 1 (FRL1), Frigida like 2 (FRL2), SVP (SHORT VEGETATIVE PHASE), VIN3, HUA2)

Related Haplotypes
No matches found.

COMMENTS