

Yes (<https://www.gephebase.org/search-criteria?/and+Presumptive+Null=~Yes^#gephebase-summary-title>)

Molecular Type

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

Aberration Type

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

Deletion Size

1-9 bp

Molecular Details of the Mutation

A 1-bp deletion in exon 3 causing a frameshift resulting in a truncated protein

Experimental Evidence

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

Main Reference

MYB-FL controls gain and loss of floral UV absorbance, a key trait affecting pollinator preference and reproductive isolation. (2016) (<https://pubmed.ncbi.nlm.nih.gov/26656847>)

Authors

Sheehan H; Moser M; Klahre U; Esfeld K; Dell'Olivo A; Mandel T; Metzger S; Vandenbussche M; Freitas L; Kuhlemeier C

Abstract

Adaptations to new pollinators involve multiple floral traits, each requiring coordinated changes in multiple genes. Despite this genetic complexity, shifts in pollination syndromes have happened frequently during angiosperm evolution. Here we study the genetic basis of floral UV absorbance, a key trait for attracting nocturnal pollinators. In *Petunia*, mutations in a single gene, MYB-FL, explain two transitions in UV absorbance. A gain of UV absorbance in the transition from bee to moth pollination was determined by a cis-regulatory mutation, whereas a frameshift mutation caused subsequent loss of UV absorbance during the transition from moth to hummingbird pollination. The functional differences in MYB-FL provide insight into the process of speciation and clarify phylogenetic relationships between nascent species.

Additional References

RELATED GEPHE

Related Genes

3 (anthocyanin2 (an2), bHLH2, WDR1) (<https://www.gephebase.org/search-criteria?/or+Taxon+ID=~33119^/and+Trait=Coloration/or+Taxon+ID=~323115^/and+Trait=Coloration/and+groupHaplotypes=true#gephebase-summary-title>)

Related Haplotypes

1 (<https://www.gephebase.org/search-criteria?/or+Gene+Gephebase=~MYB-FL^/and+Taxon+ID=~33119^/or+Gene+Gephebase=~MYB-FL^/and+Taxon+ID=~323115^#gephebase-summary-title>)

EXTERNAL LINKS

COMMENTS

possibly null mutation?