GEPHE SUMMARY

Gephebase Gene
TFL1 / HvCEN (https://www.gephebase.org/search-criteria?/and+Gene Gephebase=^TFL1 / HvCEN^#gephebase-summary-title)

GepheID
GP00001119

Entry Status
Published

Main curator
Martin

PHENOTYPIC CHANGE

Trait Category
Physiology (https://www.gephebase.org/search-criteria?/and+Trait Category=^Physiology^#gephebase-summary-title)

Trait
Growth determination habit (https://www.gephebase.org/search-criteria?/and+Trait=^Growth determination habit^#gephebase-summary-title)

Trait State in Taxon A
Hordeum vulgare - winter cultivar

Trait State in Taxon B
Hordeum vulgare - spring cultivar

Ancestral State
Data not curated

Taxonomic Status
Domesticated (https://www.gephebase.org/search-criteria?/and+Taxonomic Status=^Domesticated^#gephebase-summary-title)

Taxon A

Latin Name
Hordeum vulgare (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=^Hordeum vulgare^#gephebase-summary-title)

Common Name
-

Synonyms
barley; Hordeum vulgare L.; Horedum vulgare

Rank
species

Lineage
cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; Liliopsida; Petrosaviidae; commelinids; Poales; Poaceae; BOP clade; Pooideae; Triticodae; Triticeae; Hordeinae; Hordeum

Parent
Hordeum () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4512)

NCBI Taxonomy ID
4513 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4513)

is Taxon A an Infraspecies?
No

Taxon B

Latin Name
Hordeum vulgare (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=^Hordeum vulgare^#gephebase-summary-title)

Common Name
-

Synonyms
barley; Hordeum vulgare L.; Horedum vulgare

Rank
species

Lineage
cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; Liliopsida; Petrosaviidae; commelinids; Poales; Poaceae; BOP clade; Pooideae; Triticodae; Triticeae; Hordeinae; Hordeum

Parent
Hordeum () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4512)

NCBI Taxonomy ID
4513 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4513)

is Taxon B an Infraspecies?
No

GENOTYPIC CHANGE

Generic Gene Name
TFL1

Synonyms
MED24.6; TERMINAL FLOWER 1; TFL-1; At5g03840; F8F6_50

String
3702.AT5G03840.1 (http://string-db.org/newstring_cgi/show_network_section.pl?identifier= 3702.AT5G03840.1)

Sequence Similarities
Belongs to the phosphatidylethanolamine-binding protein family.

GO - Molecular Function
GO:0003712 : transcription coregulator activity (https://www.ebi.ac.uk/QuickGO/term/GO:0003712)

GO - Biological Process
GO:0030154 : cell differentiation (https://www.ebi.ac.uk/QuickGO/term/GO:0030154)
GO:0009908 : flower development (https://www.ebi.ac.uk/QuickGO/term/GO:0009908)
GO:0009910 : negative regulation of flower development (https://www.ebi.ac.uk/QuickGO/term/GO:0009910)

UniProtKB Arabidopsis thaliana
P93003 (http://www.uniprot.org/uniprot/P93003)

GenebankID or UniProtKB
ABF85670 (https://www.ncbi.nlm.nih.gov/nuccore/ABF85670)

GO:0009744 : response to sucrose (https://www.ebi.ac.uk/QuickGO/term/GO:0009744)
GO:0090344 : negative regulation of cell aging
(https://www.ebi.ac.uk/QuickGO/term/GO:0090344)
GO:0006623 : protein targeting to vacuole
(https://www.ebi.ac.uk/QuickGO/term/GO:0006623)

GO - Cellular Component

GO:0005886 : plasma membrane (https://www.ebi.ac.uk/QuickGO/term/GO:0005886)
GO:0005737 : cytoplasm (https://www.ebi.ac.uk/QuickGO/term/GO:0005737)
GO:0005634 : nucleus (https://www.ebi.ac.uk/QuickGO/term/GO:0005634)
GO:0031982 : vesicle (https://www.ebi.ac.uk/QuickGO/term/GO:0031982)
GO:0005773 : vacuole (https://www.ebi.ac.uk/QuickGO/term/GO:0005773)

Presumptive Null

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

Molecular Type

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

Aberration Type

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

SNP Coding Change

Nonsynonymous

Molecular Details of the Mutation

P135A

Experimental Evidence

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

	Taxon A	Taxon B	Position
Codon	-	-	-
Amino-acid	-	-	-

Main Reference

Natural variation in a homolog of Antirrhinum CENTRORADIALIS contributed to spring growth habit and environmental adaptation in cultivated barley. (2012)
(https://pubmed.ncbi.nlm.nih.gov/23160098)

Authors

Comadran J; Kilian B; Russell J; Ramsay L; Stein N; Ganal M; Shaw P; Bayer M; Thomas W; Marshall D; Hedley P; Tondelli A; Pecchioni N; Francia E; Korzun V; Walther A; Waugh R

Abstract

As early farming spread from the Fertile Crescent in the Near East around 10,000 years before the present, domesticated crops encountered considerable ecological and environmental change. Spring-sown crops that flowered without the need for an extended period of cold to promote flowering and day length-insensitive crops able to exploit the longer, cooler days of higher latitudes emerged and became established. To investigate the genetic consequences of adaptation to these new environments, we identified signatures of divergent selection in the highly differentiated modern-day spring and winter barleys. In one genetically divergent region, we identify a natural variant of the barley homolog of Antirrhinum CENTRORADIALIS (HvCEN) as a contributor to successful environmental adaptation. The distribution of HvCEN alleles in a large collection of wild and landrace accessions indicates that this involved selection and enrichment of preexisting genetic variants rather than the acquisition of mutations after domestication.

Additional References

RELATED GEPHE

Related Genes

No matches found.

Related Haplotypes

No matches found.

EXTERNAL LINKS

COMMENTS