## GEPHE SUMMARY

Gephebase Gene
teosinte branched 1 (tb1) = IntC (https://www.gephebase.org/search-criteria?/and+Gene Gephebase=^teosinte branched 1 (tb1) = IntC^#gephebase-summary-title)

GepheID
GP00001117

Entry Status
Published

Main curator
Martin

## PHENOTYPIC CHANGE

Trait #1

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

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

Trait State in Taxon A
Hordeum vulgare

Trait State in Taxon B
Hordeum vulgare

Trait #2

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

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

Trait State in Taxon A
-

Trait State in Taxon B
-

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

TB1

UniProtKB Zea mays

Q93WI2 (http://www.uniprot.org/uniprot/Q93WI2)

Synonyms

tb1; Z178A11.18

GenebankID or UniProtKB

AAN17838 (https://www.ncbi.nlm.nih.gov/nuccore/AAN17838)

String

4577.AC233950.1_FGP002
(http://string-db.org/newstring_cgi/show_network_section.pl?identifier=
4577.AC233950.1_FGP002 )

Sequence Similarities

-

GO - Molecular Function

GO:0003700 : DNA-binding transcription factor activity
(https://www.ebi.ac.uk/QuickGO/term/GO:0003700)
GO:0043565 : sequence-specific DNA binding
(https://www.ebi.ac.uk/QuickGO/term/GO:0043565)

GO - Biological Process

GO:0007275 : multicellular organism development
(https://www.ebi.ac.uk/QuickGO/term/GO:0007275)
GO:2000032 : regulation of secondary shoot formation
(https://www.ebi.ac.uk/QuickGO/term/GO:2000032)
GO:0048831 : regulation of shoot system development
(https://www.ebi.ac.uk/QuickGO/term/GO:0048831)

GO - Cellular Component

GO:0005634 : nucleus (https://www.ebi.ac.uk/QuickGO/term/GO:0005634)

Presumptive Null

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

Molecular Type

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

Aberration Type

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

Molecular Details of the Mutation

Large haplotypes; unknown

Experimental Evidence

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

Main Reference

INTERMEDIUM-C, a modifier of lateral spikelet fertility in barley, is an ortholog of the maize domestication gene TEOSINTE BRANCHED 1. (2011)
(https://pubmed.ncbi.nlm.nih.gov/21217754)

Authors

Ramsay L; Comadran J; Druka A; Marshall DF; Thomas WT; Macaulay M; MacKenzie K; Simpson C; Fuller J; Bonar N; Hayes PM; Lundqvist U; Franckowiak JD; Close TJ; Muehlbauer GJ; Waugh R

Abstract

The domestication of cereals has involved common changes in morphological features, such as seed size, seed retention and modification of vegetative and inflorescence architecture that ultimately contributed to an increase in harvested yield. In barley, this process has resulted in two different cultivated types, two-rowed and six-rowed forms, both derived from the wild two-rowed ancestor, with archaeo-botanical evidence indicating the origin of six-rowed barley early in the domestication of the species, some 8,600-8,000 years ago. Variation at SIX-ROWED SPIKE 1 (VRS1) is sufficient to control this phenotype. However, phenotypes imposed by VRS1 alleles are modified by alleles at the INTERMEDIUM-C (INT-C) locus. Here we show that INT-C is an ortholog of the maize domestication gene TEOSINTE BRANCHED 1 (TB1) and identify 17 coding mutations in barley TB1 correlated with lateral spikelet fertility phenotypes.

Additional References

## RELATED GEPHE

Related Genes

1 (VRS1 = SIX-ROWED SPIKE 1) (https://www.gephebase.org/search-criteria?/or+Taxon ID=^4513^/and+Trait=Plant architecture/or+Taxon ID=^4513^/and+Trait=Inflorescence architecture/and+groupHaplotypes=true#gephebase-summary-title)

Related Haplotypes

No matches found.

## EXTERNAL LINKS

## COMMENTS