

GEPHE SUMMARY

Hooded (#gephebase-summary-title)	Gephebase Gene	GP00000488	GephelD
Published	Entry Status	Martin	Main curator

PHENOTYPIC CHANGE

	Trait Category		
Morphology (#gephebase-summary-title)		Trait	
Flower morphology (<a "="" ?and+taxonomic="" href="https://www.gephebase.org/search-criteria/?and+Trait=^Flower morphology '#gephebase-summary-title)</td><td></td><td>Trait State in Taxon A</td><td></td></tr> <tr> <td>Hordeum vulgare</td><td></td><td>Trait State in Taxon B</td><td></td></tr> <tr> <td>Hordeum vulgare - Hooded</td><td></td><td>Ancestral State</td><td></td></tr> <tr> <td>Taxon A</td><td></td><td>Taxonomic Status</td><td></td></tr> <tr> <td>Domesticated (#gephebase-summary-title)			
Taxon A	Latin Name	Taxon B	Latin Name
Hordeum vulgare (#gephebase-summary-title)		Hordeum vulgare (#gephebase-summary-title)	
-		-	
barley; Hordeum vulgare L.; Horedum vulgare	Synonyms	barley; Hordeum vulgare L.; Horedum vulgare	Synonyms
species	Rank	species	Rank
	Lineage		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		cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; Liliopsida; Petrosaviidae; commelinids; Poales; Poaceae; BOP clade; Pooideae; Triticodae; Triticeae; Hordeinae; Hordeum	
Hordeum () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4512)	Parent	Hordeum () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4512)	Parent
4513 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4513)	NCBI Taxonomy ID	4513 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4513)	NCBI Taxonomy ID
No	is Taxon A an Infraspecies?	Yes	is Taxon B an Infraspecies?
			Taxon B Description
			Hordeum vulgare - Hooded

GENOTYPIC CHANGE

KNOX3	Generic Gene Name	UniProtKB Hordeum vulgare
K	Synonyms	GenebankID or UniProtKB
-	String	
Belongs to the TALE/KNOX homeobox family.	Sequence Similarities	
GO:0043565 : sequence-specific DNA binding (https://www.ebi.ac.uk/QuickGO/term/GO:0043565)	GO - Molecular Function	
GO:0006355 : regulation of transcription, DNA-templated (https://www.ebi.ac.uk/QuickGO/term/GO:0006355)	GO - Biological Process	
GO:0005634 : nucleus (https://www.ebi.ac.uk/QuickGO/term/GO:0005634)	GO - Cellular Component	

No (#gephebase-summary-title)	Presumptive Null
Cis-regulatory (#gephebase-summary-title)	Molecular Type
Insertion (#gephebase-summary-title)	Aberration Type
100-999 bp	Insertion Size
305bp duplication in intron 4	Molecular Details of the Mutation
Linkage Mapping (#gephebase-summary-title)	Experimental Evidence
The barley Hooded mutation caused by a duplication in a homeobox gene intron. (1995) (https://pubmed.ncbi.nlm.nih.gov/7715728)	Main Reference
MÃ¶ller KJ; Romano N; Gerstner O; Garcia-Maroto F; Pozzi C; Salamini F; Rohde W	Authors
In barley (<i>Hordeum vulgare</i> L.) the unit of inflorescence is the spikelet, which bears a fertile bract, the lemma, and the floret consisting of palea, two lodicules, three stamens and the pistil. The Hooded mutation causes the appearance of an extra flower of inverse polarity on the lemma. This phenotype is governed by the single dominant genetic locus K3. Here we show that the homeobox gene <i>Knox3</i> represents this locus. Ectopic <i>Knox3</i> gene expression in the primordium of the extra floret is caused by a 305-base pair duplication in intron 4, and phenocopies of the mutation are obtained in the heterologous tobacco system by <i>Knox3</i> overexpression. It is concluded that homeotic genes of the <i>Knox</i> gene family are involved in floral evocation. Furthermore, the study of polarity of reproductive organs in K and related mutants can now focus on homeobox genes.	Abstract
	Additional References

RELATED GEPHE

No matches found.	Related Genes
No matches found.	Related Haplotypes

EXTERNAL LINKS

COMMENTS