

# GEPHE SUMMARY

	Gephebase Gene	GephelD
VRN2 ( <a href="https://www.gephebase.org/search-criteria?/and+Gene">https://www.gephebase.org/search-criteria?/and+Gene</a> Gephebase=^VRN2^#gephebase-summary-title)	GP00001186	Main curator
Published	Entry Status	Martin

## PHENOTYPIC CHANGE

	Trait Category
Physiology ( <a href="https://www.gephebase.org/search-criteria?/and+Trait">https://www.gephebase.org/search-criteria?/and+Trait</a> Category=^Physiology^#gephebase-summary-title)	Trait
Flowering time ( <a href="https://www.gephebase.org/search-criteria?/and+Trait=^Flowering">https://www.gephebase.org/search-criteria?/and+Trait=^Flowering</a> time^#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

Taxon A	Latin Name	Taxon B	Latin Name
Hordeum vulgare ( <a href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Hordeum+vulgare^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Hordeum+vulgare^#gephebase-summary-title</a> )		Hordeum vulgare ( <a href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Hordeum+vulgare^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Hordeum+vulgare^#gephebase-summary-title</a> )	
-	Common Name	-	Common Name
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) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4512">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4512</a> )	Parent	Hordeum () - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4512">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4512</a> )	Parent
4513 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4513">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4513</a> )	NCBI Taxonomy ID	4513 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4513">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4513</a> )	NCBI Taxonomy ID
No	is Taxon A an Infraspecies?	No	is Taxon B an Infraspecies?

## GENOTYPIC CHANGE

VRN2	Generic Gene Name	UniProtKB Arabidopsis thaliana
REDUCED VERNALIZATION RESPONSE 2; At4g16845; dl4450w; FCAALL.23	Synonyms	GenebankID or UniProtKB
3702.AT4G16845.1 ( <a href="http://string-db.org/newstring_cgi/show_network_section.pl?identifier= 3702.AT4G16845.1">http://string-db.org/newstring_cgi/show_network_section.pl?identifier= 3702.AT4G16845.1</a> )	String	AAS60250 ( <a href="https://www.ncbi.nlm.nih.gov/nuccore/AAS60250">https://www.ncbi.nlm.nih.gov/nuccore/AAS60250</a> )
Belongs to the VEFS (VRN2-EMF2-FIS2-SU(Z)12) family.	Sequence Similarities	
GO:0003700 : DNA-binding transcription factor activity ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0003700">https://www.ebi.ac.uk/QuickGO/term/GO:0003700</a> )	GO - Molecular Function	
GO:0046872 : metal ion binding ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0046872">https://www.ebi.ac.uk/QuickGO/term/GO:0046872</a> )		
GO:0031490 : chromatin DNA binding ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0031490">https://www.ebi.ac.uk/QuickGO/term/GO:0031490</a> )		
GO:0009409 : response to cold ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0009409">https://www.ebi.ac.uk/QuickGO/term/GO:0009409</a> )	GO - Biological Process	

GO:0010048 : vernalization response ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0010048">https://www.ebi.ac.uk/QuickGO/term/GO:0010048</a> )	
GO:0006349 : regulation of gene expression by genetic imprinting ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0006349">https://www.ebi.ac.uk/QuickGO/term/GO:0006349</a> )	
GO - Cellular Component	
GO:0005634 : nucleus ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0005634">https://www.ebi.ac.uk/QuickGO/term/GO:0005634</a> )	
GO:0005677 : chromatin silencing complex ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0005677">https://www.ebi.ac.uk/QuickGO/term/GO:0005677</a> )	
Yes ( <a href="https://www.gephebase.org/search-criteria?/and+Presumptive+Null=%Yes%#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Presumptive+Null=%Yes%#gephebase-summary-title</a> )	Presumptive Null
Gene Loss ( <a href="https://www.gephebase.org/search-criteria?/and+Molecular+Type=%Gene+Loss%#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Molecular+Type=%Gene+Loss%#gephebase-summary-title</a> )	Molecular Type
Deletion ( <a href="https://www.gephebase.org/search-criteria?/and+Aberration+Type=%Deletion%#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Aberration+Type=%Deletion%#gephebase-summary-title</a> )	Aberration Type
unknown	Deletion Size
Large deletion	Molecular Details of the Mutation
Linkage Mapping ( <a href="https://www.gephebase.org/search-criteria?/and+Experimental+Evidence=%Linkage+Mapping%#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Experimental+Evidence=%Linkage+Mapping%#gephebase-summary-title</a> )	Experimental Evidence
The wheat VRN2 gene is a flowering repressor down-regulated by vernalization. (2004) ( <a href="https://pubmed.ncbi.nlm.nih.gov/15016992">https://pubmed.ncbi.nlm.nih.gov/15016992</a> )	Main Reference
Yan L; Loukoianov A; Blechl A; Tranquilli G; Ramakrishna W; SanMiguel P; Bennetzen JL; Echenique V; Dubcovsky J	Authors
Plants with a winter growth habit flower earlier when exposed for several weeks to cold temperatures, a process called vernalization. We report here the positional cloning of the wheat vernalization gene VRN2, a dominant repressor of flowering that is down-regulated by vernalization. Loss of function of VRN2, whether by natural mutations or deletions, resulted in spring lines, which do not require vernalization to flower. Reduction of the RNA level of VRN2 by RNA interference accelerated the flowering time of transgenic winter-wheat plants by more than a month.	Abstract
	Additional References

## RELATED GEPHE

6 (CENTRORADIALIS (HvCEN), EARLY FLOWERING 3 (here = Mat-a), EARLY FLOWERING 3/ EARLY MATURITY 8, EARLY FLOWERING 3/EARLYMATURITY8, Flowering locus T (<HvFT=VRN3), PRR37-like Photoperiod-H1 (Ppd-H1)) ( <a href="https://www.gephebase.org/search-criteria?/or+Taxon+ID=%4513%/and+Trait=Flowering+time/and+groupHaplotypes=true#gephebase-summary-title">https://www.gephebase.org/search-criteria?/or+Taxon+ID=%4513%/and+Trait=Flowering+time/and+groupHaplotypes=true#gephebase-summary-title</a> )	Related Genes
No matches found.	Related Haplotypes

## EXTERNAL LINKS

## COMMENTS