

VRN1 (https://www.gephebase.org/search-criteria?/and+GeneGephebase=~VRN1~#gephebase-summary-title)	Gephebase Gene	GP00001184	GepheID
Published	Entry Status	Martin	Main curator

	Trait Category
Physiology (https://www.gephebase.org/search-criteria?/and+Trait+Category=^Physiology^#gephebase-summary-title)	
	Trait
Flowering time (https://www.gephebase.org/search-criteria?/and+Trait=^Flowering+time^#gephebase-summary-title)	
	Trait State in Taxon A
Triticum aestivum	
	Trait State in Taxon B
Triticum aestivum	
	Ancestral State
Taxon A	
	Taxonomic Status
Domesticated (https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=^Domesticated^#gephebase-summary-title)	

GENOTYPIC CHANGE		Generic Gene Name	UniProtKB Arabidopsis thaliana
VRN1			Q8L3W1 (http://www.uniprot.org/uniprot/Q8L3W1)
		Synonyms	GenebankID or UniProtKB
REDUCED VERNALIZATION RESPONSE 1; REM39; REPRODUCTIVE MERISTEM 39; At3g18990; K13E13.10			ACV86673 (https://www.ncbi.nlm.nih.gov/nuccore/ACV86673)
		String	
3702.AT3G18990.1 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier= 3702.AT3G18990.1)			
		Sequence Similarities	
-			
		GO - Molecular Function	
GO:0043565 : sequence-specific DNA binding (https://www.ebi.ac.uk/QuickGO/term/GO:0043565)			
GO:0003677 : DNA binding (https://www.ebi.ac.uk/QuickGO/term/GO:0003677)			
		GO - Biological Process	

GO:0009909 : regulation of flower development
(<https://www.ebi.ac.uk/QuickGO/term/GO:0009909>)
GO:0010048 : vernalization response
(<https://www.ebi.ac.uk/QuickGO/term/GO:0010048>)

GO - Cellular Component

GO:0005654 : nucleoplasm (<https://www.ebi.ac.uk/QuickGO/term/GO:0005654>)

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

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

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

unknown

Deletion

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

MADS box genes control vernalization-induced flowering in cereals. (2003) (<https://pubmed.ncbi.nlm.nih.gov/14557548>)

Trevaskis B; Bagnall DJ; Ellis MH; Peacock WJ; Dennis ES

By comparing expression levels of MADS box transcription factor genes between near-isogenic winter and spring lines of bread wheat, *Triticum aestivum*, we have identified WAP1 as the probable candidate for the *Vrn-1* gene, the major locus controlling the vernalization flowering response in wheat. WAP1 is strongly expressed in spring wheats and moderately expressed in semispring wheats, but is not expressed in winter wheat plants that have not been exposed to vernalization treatment. Vernalization promotes flowering in winter wheats and strongly induces expression of WAP1. WAP1 is located on chromosome 5 in wheat and, by synteny with other cereal genomes, is likely to be collocated with *Vrn-1*. These results in hexaploid bread wheat cultivars extend the conclusion made by Yan et al. [Yan, L., Loukoianov, A., Tranquilli, G., Helguera, M., Fahima, T. & Dubcovsky, J. (2003) *Proc. Natl. Acad. Sci. USA* 100, 6263-6268] in the diploid wheat progenitor *Triticum monococcum* that WAP1 (*TmAP1*) corresponds to the *Vrn-1* gene. The barley homologue of WAP1, BM5, shows a similar pattern of expression to WAP1 and *TmAP1*. BM5 is not expressed in winter barleys that have not been vernalized, but as with WAP1, expression of BM5 is strongly induced by vernalization treatment. In spring barleys, the level of BM5 expression is determined by interactions between the *Vrn-H1* locus and a second locus for spring habit, *Vrn-H2*. There is now evidence that AP1-like genes determine the time of flowering in a range of cereal and grass species.

1 (Flowering locus T (=TaFT=VRN3)) (<https://www.gephebase.org/search-criteria?/or+Taxon ID=~4565~/and+Trait=Flowering time/and+groupHaplotypes=true#gephebase-summary-title>)

No matches found.

EXTERNAL LINKS

COMMENTS