

## GEPHE SUMMARY

|  |                |            |              |
|--|----------------|------------|--------------|
|  | Gephebase Gene |            | GepheID      |
| PRR37-like Photoperiod-H1 (Ppd-H1) ( <a href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=~PRR37-like+Photoperiod-H1+(Ppd-H1)^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=~PRR37-like+Photoperiod-H1+(Ppd-H1)^#gephebase-summary-title</a> ) |                | GP00000933 |              |
|  | Entry Status   | Martin     | Main curator |
| Published  |                |            |              |

## PHENOTYPIC CHANGE

|   |                             |   |                             |
|---|-----------------------------|---|-----------------------------|
|   | Trait Category              |   |                             |
| Physiology ( <a href="https://www.gephebase.org/search-criteria?/and+Trait+Category=~Physiology^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Trait+Category=~Physiology^#gephebase-summary-title</a> )  |                             |   |                             |
|   | Trait                       |   |                             |
| Flowering time ( <a href="https://www.gephebase.org/search-criteria?/and+Trait=~Flowering+time^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Trait=~Flowering+time^#gephebase-summary-title</a> )  |                             |   |                             |
|   | Trait State in Taxon A      |   |                             |
| Hordeum vulgare - (winter)  |                             |   |                             |
|   | Trait State in Taxon B      |   |                             |
| Hordeum vulgare - (spring)  |                             |   |                             |
|   | Ancestral State             |   |                             |
| Data not curated  |                             |   |                             |
|   | Taxonomic Status            |   |                             |
| Domesticated ( <a href="https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=~Domesticated^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=~Domesticated^#gephebase-summary-title</a> )  |                             |   |                             |
| Taxon A   |                             | Taxon B   |                             |
|   | Latin Name                  |   | Latin Name                  |
| Hordeum vulgare<br>( <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<br>( <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                 |
| -   |                             | -   |                             |
|   | Synonyms                    |   | Synonyms                    |
| barley; Hordeum vulgare L.; Horedum vulgare   |                             | barley; Hordeum vulgare L.; Horedum vulgare   |                             |
|   | Rank                        |   | Rank                        |
| species   |                             | species   |                             |
|   | Lineage                     |   | Lineage                     |
| cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; Liliopsida; Petrosaviidae; commelinids; Poales; Poaceae; BOP clade; Pooideae; Triticeae; Triticeae; Hordeinae; Hordeum |                             | cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; Liliopsida; Petrosaviidae; commelinids; Poales; Poaceae; BOP clade; Pooideae; Triticeae; Triticeae; Hordeinae; Hordeum |                             |
|   | Parent                      |   | Parent                      |
| Hordeum () - (Rank: genus)<br>( <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> )   |                             | Hordeum () - (Rank: genus)<br>( <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> )   |                             |
|   | NCBI Taxonomy ID            |   | NCBI Taxonomy ID            |
| 4513<br>( <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> )   |                             | 4513<br>( <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> )   |                             |
|   | is Taxon A an Infrappecies? |   | is Taxon B an Infrappecies? |
| No  |                             | No  |                             |

## GENOTYPIC CHANGE

|   |                         |  |  |
|---|-------------------------|--|--|
|   | Generic Gene Name       |  | UniProtKB Oryza sativa subsp. japonica |
| PRR37   |                         | Q0D3B6 ( <a href="http://www.uniprot.org/uniprot/Q0D3B6">http://www.uniprot.org/uniprot/Q0D3B6</a> ) |  |
|   | Synonyms                |  | GenebankID or UniProtKB                |
| PRR37; OsPRR37; DTH7; HD2; Os07g0695100; LOC_Os07g49460; P0627E10.21  |                         | ()   |  |
|   | String                  |  |  |
| 39947.LOC_Os07g49460.1<br>( <a href="http://string-db.org/newstring.cgi/show_network_section.pl?identifier=39947.LOC_Os07g49460.1">http://string-db.org/newstring.cgi/show_network_section.pl?identifier=39947.LOC_Os07g49460.1</a> ) |                         |  |  |
|   | Sequence Similarities   |  |  |
| Belongs to the ARR-like family.   |                         |  |  |
|   | GO - Molecular Function |  |  |
| -   |                         |  |  |
|   | GO - Biological Process |  |  |
| GO:0009908 : flower development ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0009908">https://www.ebi.ac.uk/QuickGO/term/GO:0009908</a> )   |                         |  |  |
| GO:0000160 : phosphorelay signal transduction system<br>( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0000160">https://www.ebi.ac.uk/QuickGO/term/GO:0000160</a> )   |                         |  |  |
| GO:0009585 : red, far-red light phototransduction   |                         |  |  |

(<https://www.ebi.ac.uk/QuickGO/term/GO:0009585>)  
GO:0048579 : negative regulation of long-day photoperiodism, flowering  
(<https://www.ebi.ac.uk/QuickGO/term/GO:0048579>)  
GO:0048511 : rhythmic process (<https://www.ebi.ac.uk/QuickGO/term/GO:0048511>)  
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

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

Aberration Type

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

Molecular Details of the Mutation

unknown

Experimental Evidence

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

Main Reference

The pseudo-response regulator Ppd-H1 provides adaptation to photoperiod in barley. (2005) (<https://pubmed.ncbi.nlm.nih.gov/16284181>)

Authors

Turner A; Beales J; Faure S; Dunford RP; Laurie DA

Abstract

Plants commonly use photoperiod (day length) to control the timing of flowering during the year, and variation in photoperiod response has been selected in many crops to provide adaptation to different environments and farming practices. Positional cloning identified Ppd-H1, the major determinant of barley photoperiod response, as a pseudo-response regulator, a class of genes involved in circadian clock function. Reduced photoperiod responsiveness of the ppd-H1 mutant, which is highly advantageous in spring-sown varieties, is explained by altered circadian expression of the photoperiod pathway gene CONSTANS and reduced expression of its downstream target, FT, a key regulator of flowering.

Additional References

Expression conservation within the circadian clock of a monocot: natural variation at barley Ppd-H1 affects circadian expression of flowering time genes, but not clock orthologs. (2012) (<https://pubmed.ncbi.nlm.nih.gov/22720803>)

## RELATED GEPHE

Related Genes

6 (CENTRORADIALIS (HvCEN), EARLY FLOWERING 3 (here = Mat-a), EARLY FLOWERING 3/ EARLY MATURITY 8, EARLY FLOWERING 3/ EARLYMATURITY8, Flowering locus T (=HvFT=VRN3), VRN2) (<https://www.gephebase.org/search-criteria?/or+Taxon ID=^4513^/and+Trait=Flowering time/and+groupHaplotypes=true#gephebase-summary-title>)

Related Haplotypes

No matches found.

## EXTERNAL LINKS

## COMMENTS

@GxE