

GEPHE SUMMARY

Gephebase Gene		GepheID
L6 (<a +l6+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=">https://www.gephebase.org/search-criteria?/and+Gene+Gephebase="+L6+"#gephebase-summary-title)	GP00000528	
Entry Status		Main curator
Published		

PHENOTYPIC CHANGE

Trait Category			
Physiology (<a +physiology+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait+Category=">https://www.gephebase.org/search-criteria?/and+Trait+Category="+Physiology+"#gephebase-summary-title)			
Trait			
Pathogen resistance (<a +pathogen+resistance+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait=">https://www.gephebase.org/search-criteria?/and+Trait="+Pathogen+resistance+"#gephebase-summary-title)			
Trait State in Taxon A			
Linum usitatissimum			
Trait State in Taxon B			
Linum usitatissimum			
Ancestral State			
Data not curated			
Taxonomic Status			
Intraspecific (<a +intraspecific+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=">https://www.gephebase.org/search-criteria?/and+Taxonomic+Status="+Intraspecific+"#gephebase-summary-title)			
Taxon A		Taxon B	
Latin Name		Latin Name	
Linum usitatissimum (<a +linum+usitatissimum+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Linum+usitatissimum+"#gephebase-summary-title)		Linum usitatissimum (<a +linum+usitatissimum+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Linum+usitatissimum+"#gephebase-summary-title)	
Common Name		Common Name	
flax		flax	
Synonyms		Synonyms	
flax; Linum usitatissimum L.		flax; Linum usitatissimum L.	
Rank		Rank	
species		species	
Lineage		Lineage	
cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; rosids; fabids; Malpighiales; Linaceae; Linum		cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; rosids; fabids; Malpighiales; Linaceae; Linum	
Parent		Parent	
Linum () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4005)		Linum () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4005)	
NCBI Taxonomy ID		NCBI Taxonomy ID	
4006 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4006)		4006 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4006)	
is Taxon A an Infrappecies?		is Taxon B an Infrappecies?	
No		No	

GENOTYPIC CHANGE

Generic Gene Name		UniProtKB Linum usitatissimum
L6	Q40253 (http://www.uniprot.org/uniprot/Q40253)	
Synonyms		GenebankID or UniProtKB
-		U27081 (https://www.ncbi.nlm.nih.gov/nuccore/U27081)
String		
-		
Sequence Similarities		
-		
GO - Molecular Function		
GO:0043531 : ADP binding (https://www.ebi.ac.uk/QuickGO/term/GO:0043531)		
GO - Biological Process		
GO:0007165 : signal transduction (https://www.ebi.ac.uk/QuickGO/term/GO:0007165)		
GO - Cellular Component		
-		
Presumptive Null		
Yes (<a +yes+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Presumptive+Null=">https://www.gephebase.org/search-criteria?/and+Presumptive+Null="+Yes+"#gephebase-summary-title)		
Molecular Type		
Coding (<a +coding+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Molecular+Type=">https://www.gephebase.org/search-criteria?/and+Molecular+Type="+Coding+"#gephebase-summary-title)		
Aberration Type		

Insertion (https://www.gephebase.org/search-criteria?/and+Aberration+Type=~Insertion~#gephebase-summary-title)	Insertion Size
unknown	
	Molecular Details of the Mutation
Truncated protein due to insertion of a transposable element. Reversion to resistance among descendants of mutant X75 was associated with excision of the newly transposable element Ac.	
	Experimental Evidence
Linkage Mapping (https://www.gephebase.org/search-criteria?/and+Experimental+Evidence=~Linkage+Mapping~#gephebase-summary-title)	
	Main Reference
The L6 gene for flax rust resistance is related to the Arabidopsis bacterial resistance gene RPS2 and the tobacco viral resistance gene N. (1995) (https://pubmed.ncbi.nlm.nih.gov/7549479)	
Lawrence GJ; Finnegan EJ; Ayliffe MA; Ellis JG	Authors
	Abstract
The L6 rust resistance gene from flax was cloned after tagging with the maize transposable element Activator. The gene is predicted to encode two products of 1294 and 705 amino acids that result from alternatively spliced transcripts. The longer product is similar to the products of two other plant disease resistance genes, the tobacco mosaic virus resistance gene N of tobacco and the bacterial resistance gene RPS2 of Arabidopsis. The similarity involves the presence of a nucleotide (ATP/GTP) binding site and several other amino acid motifs of unknown function in the N-terminal half of the polypeptides and a leucine-rich region in the C-terminal half. The truncated product of L6, which lacks most of the leucine-rich C-terminal region, is similar to the truncated product that is predicted from an alternative transcript of the N gene. The L6, N, and RPS2 genes, which control resistance to three widely different pathogen types, are the foundation of a class of plant disease resistance genes that can be referred to as nucleotide binding site/leucine-rich repeat resistance genes.	
	Additional References

RELATED GEPHE

	Related Genes
1 (M) (https://www.gephebase.org/search-criteria?/or+Taxon+ID=~4006~/and+Trait=Pathogen+resistance/and+groupHaplotypes=true#gephebase-summary-title)	
No matches found.	Related Haplotypes

EXTERNAL LINKS

COMMENTS

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