

GEPHE SUMMARY

L6 (https://www.gephebase.org/search-criteria?/and+Gene Gephebase=%L6%#gephebase-summary-title)	Gephebase Gene	GP00000528	GephelD
	Entry Status	Martin	Main curator
Published			

PHENOTYPIC CHANGE

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

GENOTYPIC CHANGE

L6	Generic Gene Name	UniProtKB Linum usitatissimum
-	Synonyms	GenebankID or UniProtKB
-	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 (https://www.gephebase.org/search-criteria?/and+Presumptive Null=%Yes%#gephebase-summary-title)		Molecular Type
Coding (https://www.gephebase.org/search-criteria?/and+Molecular Type=%Coding%#gephebase-summary-title)		Aberration Type

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=%5ELinkage+Mapping%23gephebase-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)	Authors
Lawrence GJ; Finnegan EJ; Ayliffe MA; Ellis JG	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

1 (M) (https://www.gephebase.org/search-criteria?/or+Taxon+ID=%5E4006%23gephebase-summary-title)	Related Genes
No matches found.	Related Haplotypes

EXTERNAL LINKS

COMMENTS

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