

## GEPHE SUMMARY

	Gephebase Gene	Gephebase ID
Cf-2.1 and Cf-2.2 ( <a href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=%Cf-2.1+and+Cf-2.2%gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=%Cf-2.1+and+Cf-2.2%gephebase-summary-title</a> )	GP00000180	Main curator
Published	Entry Status	Courtier

## PHENOTYPIC CHANGE

Trait Category		Trait	
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> )			
Pathogen resistance (leaf mold fungus ; root parasitic nematode) ( <a href="https://www.gephebase.org/search-criteria?/and+Trait=%Pathogen+resistance+(leaf+mold+fungus+;+root+parasitic+nematode)%gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Trait=%Pathogen+resistance+(leaf+mold+fungus+;+root+parasitic+nematode)%gephebase-summary-title</a> )			
Lycopersicon pimpinellifolium - resistant ; Lycopersicon esculentum Moneymaker - resistance re-acquired from L. pimpinellifolium			
Lycopersicon esculentum sensitive strains			
Taxon A		Ancestral State	
		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	Latin Name	Taxon B	Latin Name
Solanum pimpinellifolium ( <a href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=%Solanum+pimpinellifolium%gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=%Solanum+pimpinellifolium%gephebase-summary-title</a> )		Solanum lycopersicum ( <a href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=%Solanum+lycopersicum%gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=%Solanum+lycopersicum%gephebase-summary-title</a> )	
-		-	
Lycopersicon pimpinellifolium; Solanum pimpinellifolium var. racemigerum; currant tomato; Lycopersicon pimpinellifolium (L.) Mill.; Solanum pimpinellifolium L.	Synonyms	Lycopersicon esculentum var. esculentum; Solanum esculentum; Solanum lycopersicum var. humboldtii; tomato; Lycopersicon esculentum Mill.; Solanum esculentum Dunal; Solanum lycopersicum L.; Lycopersicon lycopersicum; Lycopersicum esculentum; Solanum lycopersicon	Common Name
-		-	
species	Rank	species	Rank
cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphylophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; asterids; lamiids; Solanales; Solanaceae; Solanoideae; Solaneae; Solanum; Lycopersicon	Lineage	cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphylophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; asterids; lamiids; Solanales; Solanaceae; Solanoideae; Solaneae; Solanum; Lycopersicon	Lineage
Lycopersicon () - (Rank: subgenus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 49274">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 49274</a> )	Parent	Lycopersicon () - (Rank: subgenus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 49274">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 49274</a> )	Parent
4084	NCBI Taxonomy ID	4081	NCBI Taxonomy ID
( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4084">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4084</a> )			
is Taxon A an Infraspecies?		is Taxon B an Infraspecies?	
No		No	

## GENOTYPIC CHANGE

-	Generic Gene Name	UniProtKB Solanum pimpinellifolium
-	Synonyms	GenebankID or UniProtKB
-	String	
-	Sequence Similarities	
-	GO - Molecular Function	
-	GO - Biological Process	
-	GO - Cellular Component	

Q41398 (<http://www.uniprot.org/uniprot/Q41398>)  
AAC15779 (<https://www.ncbi.nlm.nih.gov/nucleotide/AAC15779>)

GO:0016021 : integral component of membrane  
(<https://www.ebi.ac.uk/QuickGO/term/GO:0016021>)

Presumptive Null

Yes ([https://www.gephebase.org/search-criteria?/and+Presumptive Null=%27Yes%27#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Presumptive%20Null=%27Yes%27#gephebase-summary-title))

Molecular Type

Gene Loss ([https://www.gephebase.org/search-criteria?/and+Molecular Type=%27Gene Loss%27#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Molecular%20Type=%27Gene%20Loss%27#gephebase-summary-title))

Aberration Type

Deletion ([https://www.gephebase.org/search-criteria?/and+Aberration Type=%27Deletion%27#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Aberration%20Type=%27Deletion%27#gephebase-summary-title))

Deletion Size

-

Molecular Details of the Mutation

loss of the two genes Cf-2.1 and Cf-2.2 (see Dixon et al. 1998) in cultivated tomato - resistance re-acquired from related species

Experimental Evidence

Linkage Mapping ([https://www.gephebase.org/search-criteria?/and+Experimental Evidence=%27Linkage Mapping%27#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Experimental%20Evidence=%27Linkage%20Mapping%27#gephebase-summary-title))

Main Reference

The tomato Cf-2 disease resistance locus comprises two functional genes encoding leucine-rich repeat proteins. (1996) (<https://pubmed.ncbi.nlm.nih.gov/8608599>)

Authors

Dixon MS; Jones DA; Keddie JS; Thomas CM; Harrison K; Jones JD

Abstract

In plants, resistance to pathogens is frequently determined by dominant resistance genes, whose products are proposed to recognize pathogen-encoded avirulence gene (Avr) products. The tomato resistance locus Cf-2 was isolated by positional cloning and found to contain two almost identical genes, each conferring resistance to isolates of tomato leaf mould (*C. fulvum*) expressing the corresponding Avr2 gene. The two Cf-2 genes encode protein products that differ from each other by only three amino acids and contain 38 leucine-rich repeat (LRR) motifs. Of the LRRs, 20 show extremely conserved alternating repeats. The C-terminus of Cf-2 carries regions of pronounced homology to the protein encoded by the unlinked Cf-9 gene. We suggest that this conserved region interacts with other proteins involved in activating plant defense mechanisms.

Additional References

The tomato Cf-5 disease resistance gene and six homologs show pronounced allelic variation in leucine-rich repeat copy number. (1998) (<https://pubmed.ncbi.nlm.nih.gov/9811798>)

Dual disease resistance mediated by the immune receptor Cf-2 in tomato requires a common virulence target of a fungus and a nematode. (2012) (<https://pubmed.ncbi.nlm.nih.gov/22675118>)

## RELATED GEPHE

Related Genes

1 (Cf-4/9) ([https://www.gephebase.org/search-criteria?/or+Taxon ID=%274084%27/and+Trait=Pathogen resistance/or+Taxon ID=%274081%27/and+Trait=Pathogen resistance/and+groupHaplotypes=true#gephebase-summary-title](https://www.gephebase.org/search-criteria?/or+Taxon%20ID=%274084%27/and+Trait=Pathogen%20resistance/or+Taxon%20ID=%274081%27/and+Trait=Pathogen%20resistance/and+groupHaplotypes=true#gephebase-summary-title))

Related Haplotypes

No matches found.

## EXTERNAL LINKS

## COMMENTS

Diverse family of paralogous genes ; @Introgression