

GEPHE SUMMARY

PG (<a +pg+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=">https://www.gephebase.org/search-criteria?/and+Gene Gephebase=^PG^#gephebase-summary-title)	Gephebase Gene	GepheID	
	Entry Status	GP00001449	
	Published	Prigent	
		Main curator	

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	
Fruit ripening (<a +fruit+ripening+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait=">https://www.gephebase.org/search-criteria?/and+Trait=^Fruit ripening^#gephebase-summary-title)		Trait State in Taxon A	
Tomato fruit softening		Trait State in Taxon B	
Wild-type pepper		Ancestral State	
Taxon A		Taxonomic Status	
Domesticated (<a +domesticated+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=">https://www.gephebase.org/search-criteria?/and+Taxonomic Status=^Domesticated^#gephebase-summary-title)			
Taxon A		Taxon B	
Latin Name		Latin Name	
Solanum lycopersicum (<a +solanum+lycopersicum+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=^Solanum lycopersicum^#gephebase-summary-title)		Capsicum chinense (<a +capsicum+chinense+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=^Capsicum chinense^#gephebase-summary-title)	
Common Name		Common Name	
tomato		-	
Synonyms		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		Scotch bonnet; bonnet pepper; habanero; piri piri; rocotillo; Capsicum chinense Jacq.	
Rank		Rank	
species		species	
Lineage		Lineage	
cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; asterids; lamiids; Solanales; Solanaceae; Solanoideae; Solaneae; Solanum; Lycopersicon		cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; asterids; lamiids; Solanales; Solanaceae; Solanoideae; Capsiceae; Capsicum	
Parent		Parent	
Lycopersicon () - (Rank: subgenus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 49274)		Capsicum (peppers) - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4071)	
NCBI Taxonomy ID		NCBI Taxonomy ID	
4081 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4081)		80379 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 80379)	
is Taxon A an Infrappecies?		is Taxon B an Infrappecies?	
No		No	

GENOTYPIC CHANGE

		Generic Gene Name	
PG		B9VRK6 (http://www.uniprot.org/uniprot/B9VRK6)	
		UniProtKB Capsicum annuum	
		Synonyms	
-		GenebankID or UniProtKB	
		String	
-		FJ596175 (https://www.ncbi.nlm.nih.gov/nuccore/FJ596175)	
		Sequence Similarities	
Belongs to the glycosyl hydrolase 28 family.			
		GO - Molecular Function	
GO:0004650 : polygalacturonase activity (https://www.ebi.ac.uk/QuickGO/term/GO:0004650)			
		GO - Biological Process	
GO:0005975 : carbohydrate metabolic process (https://www.ebi.ac.uk/QuickGO/term/GO:0005975)			
		GO - Cellular Component	

-

Yes (<https://www.gephebase.org/search-criteria?/and+Presumptive Null=^Yes^#gephebase-summary-title>)

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

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

-

a point mutation in the 3' splice acceptor site of intron VIII generates a premature stop codon

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

Presumptive Null

Molecular Type

Aberration Type

SNP Coding Change

Molecular Details of the Mutation

Experimental Evidence

	Taxon A	Taxon B	Position
Codon	-	-	-
Amino-acid	-	-	-

Genome sequence of the hot pepper provides insights into the evolution of pungency in Capsicum species. (2014) (<https://pubmed.ncbi.nlm.nih.gov/24441736>)

Kim S; Park M; Yeom SI; Kim YM; Lee JM; Lee HA; Seo E; Choi J; Cheong K; Kim KT; Jung K; Lee GW; Oh SK; Bae C; Kim SB; Lee HY; Kim SY; Kim MS; Kang BC; Jo YD; Yang HB; Jeong HJ; Kang WH; Kwon JK; Shin C; Lim JY; Park JH; Huh JH; Kim JS; Kim BD; Cohen O; Paran I; Suh MC; Lee SB; Kim YK; Shin Y; Noh SJ; Park J; Seo YS; Kwon SY; Kim HA; Park JM; Kim HJ; Choi SB; Bosland PW; Reeves G; Jo SH; Lee BW; Cho HT; Choi HS; Lee MS; Yu Y; Do Choi Y; Park BS; van Deynze A; Ashrafi H; Hill T; Kim WT; Pai HS; Ahn HK; Yeam I; Giovannoni JJ; Rose JK; SÃ¸rensen I; Lee SJ; Kim RW; Choi IY; Choi BS; Lim JS; Lee YH; Choi D

Hot pepper (*Capsicum annuum*), one of the oldest domesticated crops in the Americas, is the most widely grown spice crop in the world. We report whole-genome sequencing and assembly of the hot pepper (Mexican landrace of *Capsicum annuum* cv. CM334) at 186.6Å— coverage. We also report resequencing of two cultivated peppers and de novo sequencing of the wild species *Capsicum chinense*. The genome size of the hot pepper was approximately fourfold larger than that of its close relative tomato, and the genome showed an accumulation of Gypsy and Caulimoviridae family elements. Integrative genomic and transcriptomic analyses suggested that change in gene expression and neofunctionalization of capsaicin synthase have shaped capsaicinoid biosynthesis. We found differential molecular patterns of ripening regulators and ethylene synthesis in hot pepper and tomato. The reference genome will serve as a platform for improving the nutritional and medicinal values of *Capsicum* species.

Genome sequence of the hot pepper provides insights into the evolution of pungency in Capsicum species. (2014) (<https://pubmed.ncbi.nlm.nih.gov/24441736>)

Main Reference

Authors

Abstract

Additional References

RELATED GEPHE

2 (LeSPL-CNR, ripening inhibitor (rin) = LeMADS-RIN and LeMADS-MC) (<https://www.gephebase.org/search-criteria?/or+Taxon ID=^4081^/and+Trait=Fruit ripening/or+Taxon ID=^80379^/and+Trait=Fruit ripening/and+groupHaplotypes=true#gephebase-summary-title>)

1 (<https://www.gephebase.org/search-criteria?/or+Gene Gephebase=^PG^/and+Taxon ID=^4081^/or+Gene Gephebase=^PG^/and+Taxon ID=^80379^#gephebase-summary-title>)

Related Genes

Related Haplotypes

EXTERNAL LINKS

COMMENTS

@Splicing not clear if pepper is C. chinense