

GEPHE SUMMARY

	Gephebase Gene		GepheID
Period (per) (<a +period+(per)^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=">https://www.gephebase.org/search-criteria?/and+Gene+Gephebase="+Period+(per)^#gephebase-summary-title)		GP00000860	
	Entry Status	Courtier	Main curator
Published			

PHENOTYPIC CHANGE

	Trait Category		
Behavior (<a +behavior^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait+Category=">https://www.gephebase.org/search-criteria?/and+Trait+Category="+Behavior^#gephebase-summary-title)			
	Trait		
Courtship song (<a +courtship+song^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait=">https://www.gephebase.org/search-criteria?/and+Trait="+Courtship+song^#gephebase-summary-title)			
	Trait State in Taxon A		
Drosophila melanogaster			
	Trait State in Taxon B		
Drosophila simulans			
	Ancestral State		
Data not curated			
	Taxonomic Status		
Interspecific (<a +interspecific^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=">https://www.gephebase.org/search-criteria?/and+Taxonomic+Status="+Interspecific^#gephebase-summary-title)			
	Taxon A		Taxon B
	Latin Name		Latin Name
Drosophila melanogaster (<a +drosophila+melanogaster^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Drosophila+melanogaster^#gephebase-summary-title)		Drosophila simulans (<a +drosophila+simulans^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Drosophila+simulans^#gephebase-summary-title)	
	Common Name		Common Name
fruit fly		-	
	Synonyms		Synonyms
Sophophora melanogaster; fruit fly; Drosophila melanogaster Meigen, 1830; Sophophora melanogaster (Meigen, 1830); Drosophila melangaster		-	
	Rank		Rank
species		species	
	Lineage		Lineage
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Protostomia; Ecdysozoa; Panarthropoda; Arthropoda; Mandibulata; Pancrustacea; Hexapoda; Insecta; Dicondylia; Pterygota; Neoptera; Holometabola; Diptera; Brachycera; Muscomorpha; Eremoneura; Cyclorrhapha; Schizophora; Acalyptratae; Ephydroidea; Drosophilidae; Drosophilinae; Drosophilini; Drosophila; Sophophora; melanogaster group; melanogaster subgroup		cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Protostomia; Ecdysozoa; Panarthropoda; Arthropoda; Mandibulata; Pancrustacea; Hexapoda; Insecta; Dicondylia; Pterygota; Neoptera; Holometabola; Diptera; Brachycera; Muscomorpha; Eremoneura; Cyclorrhapha; Schizophora; Acalyptratae; Ephydroidea; Drosophilidae; Drosophilinae; Drosophilini; Drosophila; Sophophora; melanogaster group; melanogaster subgroup	
	Parent		Parent
melanogaster subgroup () - (Rank: species subgroup) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=32351)		melanogaster subgroup () - (Rank: species subgroup) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=32351)	
	NCBI Taxonomy ID		NCBI Taxonomy ID
7227 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=7227)		7240 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=7240)	
	is Taxon A an Intraspecies?		is Taxon B an Intraspecies?
No		No	

GENOTYPIC CHANGE

	Generic Gene Name		UniProtKB Drosophila melanogaster
per		P07663 (http://www.uniprot.org/uniprot/P07663)	
	Synonyms		GenebankID or UniProtKB
CG2647; Clk; clk-6; Dmel\CG2647; dmper; dper; dPER; EG:155E2.4; mel_per; Per; PER; Per-2		AY370453 (https://www.ncbi.nlm.nih.gov/nuccore/AY370453)	
	String		
7227.FBpp0070455 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=7227.FBpp0070455)			
	Sequence Similarities		
-			
	GO - Molecular Function		
GO:0042802 : identical protein binding (https://www.ebi.ac.uk/QuickGO/term/GO:0042802)			
GO:0042803 : protein homodimerization activity			

(<https://www.ebi.ac.uk/QuickGO/term/GO:0042803>)
GO:0046982 : protein heterodimerization activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:0046982>)
GO:0008134 : transcription factor binding
(<https://www.ebi.ac.uk/QuickGO/term/GO:0008134>)
GO:0003714 : transcription corepressor activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:0003714>)
GO:0003712 : transcription coregulator activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:0003712>)
GO:0000976 : transcription regulatory region sequence-specific DNA binding
(<https://www.ebi.ac.uk/QuickGO/term/GO:0000976>)
GO:0001222 : transcription corepressor binding
(<https://www.ebi.ac.uk/QuickGO/term/GO:0001222>)

GO - Biological Process

GO:0009416 : response to light stimulus
(<https://www.ebi.ac.uk/QuickGO/term/GO:0009416>)
GO:0000122 : negative regulation of transcription by RNA polymerase II
(<https://www.ebi.ac.uk/QuickGO/term/GO:0000122>)
GO:0045892 : negative regulation of transcription, DNA-templated
(<https://www.ebi.ac.uk/QuickGO/term/GO:0045892>)
GO:0007616 : long-term memory (<https://www.ebi.ac.uk/QuickGO/term/GO:0007616>)
GO:0032922 : circadian regulation of gene expression
(<https://www.ebi.ac.uk/QuickGO/term/GO:0032922>)
GO:0007623 : circadian rhythm (<https://www.ebi.ac.uk/QuickGO/term/GO:0007623>)
GO:0042752 : regulation of circadian rhythm
(<https://www.ebi.ac.uk/QuickGO/term/GO:0042752>)
GO:0045187 : regulation of circadian sleep/wake cycle, sleep
(<https://www.ebi.ac.uk/QuickGO/term/GO:0045187>)
GO:0007619 : courtship behavior (<https://www.ebi.ac.uk/QuickGO/term/GO:0007619>)
GO:0045433 : male courtship behavior, veined wing generated song production
(<https://www.ebi.ac.uk/QuickGO/term/GO:0045433>)
GO:0045475 : locomotor rhythm (<https://www.ebi.ac.uk/QuickGO/term/GO:0045475>)
GO:0008340 : determination of adult lifespan
(<https://www.ebi.ac.uk/QuickGO/term/GO:0008340>)
GO:0009266 : response to temperature stimulus
(<https://www.ebi.ac.uk/QuickGO/term/GO:0009266>)
GO:0006979 : response to oxidative stress
(<https://www.ebi.ac.uk/QuickGO/term/GO:0006979>)
GO:0001932 : regulation of protein phosphorylation
(<https://www.ebi.ac.uk/QuickGO/term/GO:0001932>)
GO:0001306 : age-dependent response to oxidative stress
(<https://www.ebi.ac.uk/QuickGO/term/GO:0001306>)
GO:0048148 : behavioral response to cocaine
(<https://www.ebi.ac.uk/QuickGO/term/GO:0048148>)
GO:0048512 : circadian behavior (<https://www.ebi.ac.uk/QuickGO/term/GO:0048512>)
GO:0042745 : circadian sleep/wake cycle
(<https://www.ebi.ac.uk/QuickGO/term/GO:0042745>)
GO:0060086 : circadian temperature homeostasis
(<https://www.ebi.ac.uk/QuickGO/term/GO:0060086>)
GO:0007620 : copulation (<https://www.ebi.ac.uk/QuickGO/term/GO:0007620>)
GO:0008062 : eclosion rhythm (<https://www.ebi.ac.uk/QuickGO/term/GO:0008062>)
GO:0009649 : entrainment of circadian clock
(<https://www.ebi.ac.uk/QuickGO/term/GO:0009649>)
GO:0043153 : entrainment of circadian clock by photoperiod
(<https://www.ebi.ac.uk/QuickGO/term/GO:0043153>)
GO:0007617 : mating behavior (<https://www.ebi.ac.uk/QuickGO/term/GO:0007617>)
GO:2000678 : negative regulation of transcription regulatory region DNA binding
(<https://www.ebi.ac.uk/QuickGO/term/GO:2000678>)
GO:1904059 : regulation of locomotor rhythm
(<https://www.ebi.ac.uk/QuickGO/term/GO:1904059>)
GO:0007622 : rhythmic behavior (<https://www.ebi.ac.uk/QuickGO/term/GO:0007622>)

GO - Cellular Component

GO:0005737 : cytoplasm (<https://www.ebi.ac.uk/QuickGO/term/GO:0005737>)
GO:0005829 : cytosol (<https://www.ebi.ac.uk/QuickGO/term/GO:0005829>)
GO:0005654 : nucleoplasm (<https://www.ebi.ac.uk/QuickGO/term/GO:0005654>)
GO:0005634 : nucleus (<https://www.ebi.ac.uk/QuickGO/term/GO:0005634>)
GO:0044297 : cell body (<https://www.ebi.ac.uk/QuickGO/term/GO:0044297>)
GO:0048471 : perinuclear region of cytoplasm
(<https://www.ebi.ac.uk/QuickGO/term/GO:0048471>)

Presumptive Null

No (<https://www.gephebase.org/search-criteria?/and+Presumptive Null=~No^#gephebase-summary-title>)

Molecular Type

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

Aberration Type

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

SNP Coding Change

Nonsynonymous

Molecular Details of the Mutation

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

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

Main Reference

Molecular transfer of a species-specific behavior from *Drosophila simulans* to *Drosophila melanogaster*. (1991) (<https://pubmed.ncbi.nlm.nih.gov/1900131>)

Authors

Wheeler DA; Kyriacou CP; Greenacre ML; Yu Q; Rutila JE; Rosbash M; Hall JC

Abstract

Drosophila males modulate the interpulse intervals produced during their courtship songs. These song cycles, which are altered by mutations in the clock gene *period*, exhibit a species-specific variation that facilitates mating. We have used chimeric *period* gene constructs from *Drosophila melanogaster* and *Drosophila simulans* in germline transformation experiments to map the genetic control of their song rhythm difference to a small segment of the amino acid encoding information within this gene.

Additional References

Interspecific genetic control of courtship song production and reception in *Drosophila*. (1986) (<https://pubmed.ncbi.nlm.nih.gov/3083506>)
Failure to reproduce period-dependent song cycles in *Drosophila* is due to poor automated pulse-detection and low-intensity courtship. (2017) (<https://pubmed.ncbi.nlm.nih.gov/28174268>)
Reported *Drosophila* courtship song rhythms are artifacts of data analysis. (2014) (<https://pubmed.ncbi.nlm.nih.gov/24965095>)

RELATED GEPHE

Related Genes

No matches found.

Related Haplotypes

1 ([https://www.gephebase.org/search-criteria?/or+Gene Gephebase=^Period \(per\)^/and+Taxon ID=^7227^/or+Gene Gephebase=^Period \(per\)^/and+Taxon ID=^7240^#gephebase-summary-title](https://www.gephebase.org/search-criteria?/or+Gene Gephebase=^Period (per)^/and+Taxon ID=^7227^/or+Gene Gephebase=^Period (per)^/and+Taxon ID=^7240^#gephebase-summary-title))

EXTERNAL LINKS

COMMENTS