

GEPHE SUMMARY

	Gephebase Gene		GepheID
Odysseus-site homeobox (https://www.gephebase.org/search-criteria?/and+Gene Gephebase="Odysseus-site homeobox"#gephebase-summary-title)		GP00000752	
	Entry Status	Martin	Main curator
Published			

PHENOTYPIC CHANGE

	Trait Category		
Physiology (https://www.gephebase.org/search-criteria?/and+Trait Category="Physiology"#gephebase-summary-title)			
	Trait		
Hybrid incompatibility (F1 male sterility) (<a (f1="" href="https://www.gephebase.org/search-criteria?/and+Trait=" hybrid="" incompatibility="" male="" sterility)"#gephebase-summary-title"="">https://www.gephebase.org/search-criteria?/and+Trait="Hybrid incompatibility (F1 male sterility)"#gephebase-summary-title)			
	Trait State in Taxon A		
Drosophila mauritiana			
	Trait State in Taxon B		
Drosophila simulans			
	Ancestral State		
Data not curated			
	Taxonomic Status		
Interspecific (https://www.gephebase.org/search-criteria?/and+Taxonomic Status="Interspecific"#gephebase-summary-title)			
Taxon A		Taxon B	
	Latin Name		Latin Name
Drosophila mauritiana (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms="Drosophila mauritiana"#gephebase-summary-title)		Drosophila simulans (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms="Drosophila simulans"#gephebase-summary-title)	
	Common Name		Common Name
-		-	
	Synonyms		Synonyms
-		-	
	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; Acalyptera; 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; Acalyptera; 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
7226 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=7226)		7240 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=7240)	
	is Taxon A an Infrapopulation?		is Taxon B an Infrapopulation?
No		No	

GENOTYPIC CHANGE

	Generic Gene Name		UniProtKB Drosophila melanogaster
OdsH		Q9VX20 (http://www.uniprot.org/uniprot/Q9VX20)	
	Synonyms		GenebankID or UniProtKB
CG6352; Dmel\CG6352; odsh; odsH; Odsh; OdsH[mel]; Dmel_CG6352		()	
	String		
7227.FBpp0074235 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=7227.FBpp0074235)			
	Sequence Similarities		
-			
	GO - Molecular Function		
GO:0043565 : sequence-specific DNA binding (https://www.ebi.ac.uk/QuickGO/term/GO:0043565)			
	GO - Biological Process		
GO:0006355 : regulation of transcription, DNA-templated (https://www.ebi.ac.uk/QuickGO/term/GO:0006355)			

GO:0032504 : multicellular organism reproduction
(<https://www.ebi.ac.uk/QuickGO/term/GO:0032504>)

GO - Cellular Component

GO:0005634 : nucleus (<https://www.ebi.ac.uk/QuickGO/term/GO:0005634>)

GO:0005615 : extracellular space (<https://www.ebi.ac.uk/QuickGO/term/GO:0005615>)

Presumptive Null

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

Molecular Type

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

Aberration Type

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

Molecular Details of the Mutation

Rapid coding divergence

Experimental Evidence

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

Main Reference

Altered heterochromatin binding by a hybrid sterility protein in *Drosophila* sibling species. (2009) (<https://pubmed.ncbi.nlm.nih.gov/19933102>)

Authors

Bayes JJ; Malik HS

Abstract

Hybrid sterility of the heterogametic sex is one of the first postzygotic reproductive barriers to evolve during speciation, yet the molecular basis of hybrid sterility is poorly understood. We show that the hybrid male sterility gene *Odysseus-site homeobox* (*OdsH*) encodes a protein that localizes to evolutionarily dynamic loci within heterochromatin and leads to their decondensation. In *Drosophila mauritiana* x *Drosophila simulans* male hybrids, *OdsH* from *D. mauritiana* (*OdsH_{mau}*) acts as a sterilizing factor by associating with the heterochromatic Y chromosome of *D. simulans*, whereas *D. simulans* *OdsH* (*OdsH_{sim}*) does not. Characterization of sterile hybrid testes revealed that *OdsH* abundance and localization in the premeiotic phases of spermatogenesis differ between species. These results reveal that rapid heterochromatin evolution affects the onset of hybrid sterility.

Additional References

RELATED GEPHE

No matches found.

Related Genes

No matches found.

Related Haplotypes

EXTERNAL LINKS

COMMENTS

<http://flybase.org/reports/FBal0033612> - <http://flybase.org/reports/FBal0033623>