

GEPHE SUMMARY

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

<p>Physiology (https://www.gephebase.org/search-criteria?/and+Trait Category="Physiology"#gephebase-summary-title)</p> <p>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)</p> <p>Drosophila mauritiana</p> <p>Drosophila simulans</p> <p>Data not curated</p> <p>Interspecific (https://www.gephebase.org/search-criteria?/and+Taxonomic Status="Interspecific"#gephebase-summary-title)</p>	<p>Trait Category</p> <p>Trait</p> <p>Trait State in Taxon A</p> <p>Trait State in Taxon B</p> <p>Ancestral State</p> <p>Taxonomic Status</p>	<p>Taxon A</p> <p>Latin Name</p> <p>Drosophila mauritiana (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms="Drosophila mauritiana"#gephebase-summary-title)</p> <p>-</p> <p>-</p> <p>species</p> <p>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</p> <p>melanogaster subgroup () - (Rank: species subgroup) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 32351)</p> <p>7226 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 7226)</p> <p>No</p>	<p>Latin Name</p> <p>Common Name</p> <p>Synonyms</p> <p>Rank</p> <p>Lineage</p> <p>Parent</p> <p>NCBI Taxonomy ID</p> <p>is Taxon A an Infrasppecies?</p>	<p>Taxon B</p> <p>Latin Name</p> <p>Drosophila simulans (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms="Drosophila simulans"#gephebase-summary-title)</p> <p>-</p> <p>-</p> <p>species</p> <p>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</p> <p>melanogaster subgroup () - (Rank: species subgroup) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 32351)</p> <p>7240 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 7240)</p> <p>No</p>	<p>Latin Name</p> <p>Common Name</p> <p>Synonyms</p> <p>Rank</p> <p>Lineage</p> <p>Parent</p> <p>NCBI Taxonomy ID</p> <p>is Taxon B an Infrasppecies?</p>
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GENOTYPIC CHANGE

<p>OdsH</p> <p>CG6352; Dmel\CG6352; odsh; odsH; Odsh; OdsH[mel]; Dmel_CG6352</p> <p>7227.FBpp0074235 (http://string-db.org/newstring_cgi/show_network_section.pl?identifier= 7227.FBpp0074235)</p> <p>-</p> <p>GO:0043565 : sequence-specific DNA binding (https://www.ebi.ac.uk/QuickGO/term/GO:0043565)</p> <p>GO:0006355 : regulation of transcription, DNA-templated (https://www.ebi.ac.uk/QuickGO/term/GO:0006355)</p>	<p>Generic Gene Name</p> <p>Synonyms</p> <p>String</p> <p>Sequence Similarities</p> <p>GO - Molecular Function</p> <p>GO - Biological Process</p>	<p>UniProtKB Drosophila melanogaster</p> <p>Q9VX20 (http://www.uniprot.org/uniprot/Q9VX20)</p> <p>0</p> <p>GenebankID or UniProtKB</p>
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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>