

GEPHE SUMMARY

Nup160 (https://www.gephebase.org/search-criteria?/and+GeneGephebase=Nup160#gephebase-summary-title)	Gephebase Gene	GP00000742	GepheID
Published	Entry Status	Martin	Main curator

PHENOTYPIC CHANGE

Physiology (https://www.gephebase.org/search-criteria?/and+TraitCategory=Physiology#gephebase-summary-title)	Trait Category		
Hybrid incompatibility (F1 male sterility) (https://www.gephebase.org/search-criteria?/and+Trait=Hybrid incompatibility (F1 male sterility)#gephebase-summary-title)	Trait		
Drosophila melanogaster	Trait State in Taxon A		
Drosophila simulans	Trait State in Taxon B		
Data not curated	Ancestral State		
Interspecific (https://www.gephebase.org/search-criteria?/and+TaxonomicStatus=Interspecific#gephebase-summary-title)	Taxonomic Status		
	Taxon A		Taxon B
Drosophila melanogaster (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=Drosophila melanogaster#gephebase-summary-title)	Latin Name	Drosophila simulans (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=Drosophila simulans#gephebase-summary-title)	Latin Name
fruit fly	Common Name	-	Common Name
Sophophora melanogaster; fruit fly; Drosophila melanogaster Meigen, 1830; Sophophora melanogaster (Meigen, 1830); Drosophila melangaster	Synonyms	-	Synonyms
species	Rank	species	Rank
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; Acalypratae; Ephydroidea; Drosophilidae; Drosophilinae; Drosophilini; Drosophila; Sophophora; melanogaster group; melanogaster subgroup	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; Acalypratae; Ephydroidea; Drosophilidae; Drosophilinae; Drosophilini; Drosophila; Sophophora; melanogaster group; melanogaster subgroup	Lineage
melanogaster subgroup () - (Rank: species subgroup) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=32351)	Parent	melanogaster subgroup () - (Rank: species subgroup) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=32351)	Parent
7227 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=7227)	NCBI Taxonomy ID	7240 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=7240)	NCBI Taxonomy ID
No	is Taxon A an Intraspecies?	No	is Taxon B an Intraspecies?

GENOTYPIC CHANGE

Nup160	Generic Gene Name	Q9VKJ3 (http://www.uniprot.org/uniprot/Q9VKJ3)	UniProtKB Drosophila melanogaster
CG4738; Dmel\CG4738; l(2)SH2 2055; l(2)SH2055; Nup; nup160; Nup160[mel]	Synonyms	KMY89705 (https://www.ncbi.nlm.nih.gov/nuccore/KMY89705)	GenebankID or UniProtKB
7227.FBpp0079788 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=7227.FBpp0079788)	String		
-	Sequence Similarities		
GO:0017056 : structural constituent of nuclear pore (https://www.ebi.ac.uk/QuickGO/term/GO:0017056)	GO - Molecular Function		
GO:0000724 : double-strand break repair via homologous recombination	GO - Biological Process		

(<https://www.ebi.ac.uk/QuickGO/term/GO:0000724>)
GO:0006406 : mRNA export from nucleus
(<https://www.ebi.ac.uk/QuickGO/term/GO:0006406>)
GO:0006606 : protein import into nucleus
(<https://www.ebi.ac.uk/QuickGO/term/GO:0006606>)

GO - Cellular Component

GO:0005643 : nuclear pore (<https://www.ebi.ac.uk/QuickGO/term/GO:0005643>)
GO:0031080 : nuclear pore outer ring
(<https://www.ebi.ac.uk/QuickGO/term/GO:0031080>)

Presumptive Null

No ([#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Presumptive+Null=))

Molecular Type

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

Aberration Type

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

Molecular Details of the Mutation

Coding divergence

Experimental Evidence

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

Main Reference

Evolution of the *Drosophila* nuclear pore complex results in multiple hybrid incompatibilities. (2009) (<https://pubmed.ncbi.nlm.nih.gov/19197064>)

Authors

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Abstract

Speciation often involves the evolution of incompatible gene interactions that cause sterility or lethality in hybrids between populations. These so-called hybrid incompatibilities occur between two or more functionally divergent loci. We show that the nucleoporin 160kDa (Nup160) gene of the fruitfly *Drosophila simulans* is incompatible with one or more factors on the *D. melanogaster* X chromosome, causing hybrid lethality. Nup160 encodes a nuclear pore complex protein and shows evidence of adaptive evolution. Furthermore, the protein encoded by Nup160 directly interacts with that of another hybrid lethality gene, Nup96, indicating that at least two lethal hybrid incompatibility genes have evolved as byproducts of divergent coevolution among interacting components of the *Drosophila* nuclear pore complex.

Additional References

RELATED GEPHE

Related Genes

6 (gzf, Hybrid male rescue, JYalpha, Lethal Hybrid rescue, Nup96, tyrosyl-tRNA synthetase (mt-TyrRS)) ([https://www.gephebase.org/search-criteria?/or+Taxon+ID="+7227^/and+Trait=Hybrid+incompatibility/or+Taxon+ID="+7240^/and+Trait=Hybrid+incompatibility/and+groupHaplotypes=true#gephebase-summary-title](https://www.gephebase.org/search-criteria?/or+Taxon+ID=))

Related Haplotypes

No matches found.

EXTERNAL LINKS

COMMENTS