

GEPHE SUMMARY

	Gephebase Gene		GepheID
metallothionein (Mtn) (https://www.gephebase.org/search-criteria?/and+Gene Gephebase="metallothionein (Mtn)"#gephebase-summary-title)	GP00000653		
	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		
Metal tolerance (https://www.gephebase.org/search-criteria?/and+Trait ="Metal tolerance"#gephebase-summary-title)			
	Trait State in Taxon A		
Drosophila melanogaster			
	Trait State in Taxon B		
Drosophila melanogaster - resistant			
	Ancestral State		
Data not curated			
	Taxonomic Status		
Intraspecific (https://www.gephebase.org/search-criteria?/and+Taxonomic Status="Intraspecific"#gephebase-summary-title)			
	Taxon A		Taxon B
	Latin Name		Latin Name
Drosophila melanogaster (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms="Drosophila melanogaster"#gephebase-summary-title)		Drosophila melanogaster (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms="Drosophila melanogaster"#gephebase-summary-title)	
	Common Name		Common Name
fruit fly		fruit fly	
	Synonyms		Synonyms
Sophophora melanogaster; fruit fly; Drosophila melanogaster Meigen, 1830; Sophophora melanogaster (Meigen, 1830); Drosophila melangaster		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)		7227 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=7227)	
	is Taxon A an Intraspecies?		is Taxon B an Intraspecies?
No		No	

GENOTYPIC CHANGE

	Generic Gene Name		UniProtKB Drosophila melanogaster
MtnA		P04357 (http://www.uniprot.org/uniprot/P04357)	
	Synonyms		GenebankID or UniProtKB
anon-WO0153538.42; anon-WO0153538.44; anon-WO0153538.49; BcDNA:GH18460; CG9470; Dmel\CG9470; DrosMtn; Mtn; MTN; mtnA		EU744339 (https://www.ncbi.nlm.nih.gov/nuccore/EU744339)	
	String		
7227.FBpp0081636 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=7227.FBpp0081636)			
	Sequence Similarities		
Belongs to the metallothionein superfamily. Type 5 family.			
	GO - Molecular Function		
GO:0046872 : metal ion binding (https://www.ebi.ac.uk/QuickGO/term/GO:0046872)			
	GO - Biological Process		
GO:0010038 : response to metal ion (https://www.ebi.ac.uk/QuickGO/term/GO:0010038)			

GO:0055065 : metal ion homeostasis
(<https://www.ebi.ac.uk/QuickGO/term/GO:0055065>)

GO - Cellular Component

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

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

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

Gene duplication

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

Structure and expression of a tandem duplication of the Drosophila metallothionein gene. (1986) (<https://pubmed.ncbi.nlm.nih.gov/3016735>)

Otto E; Young JE; Maroni G

A strain of cadmium-resistant *Drosophila* containing a chromosomal duplication of the metallothionein gene was isolated. This duplication is stably inherited in the absence of selective pressure, and larvae homozygous for it can produce approximately twice as much metallothionein RNA as wild-type larvae. The entire duplication was cloned within a 5.7-kilobase fragment; this fragment contained a direct, tandem repeat of 2.2 kilobases of DNA: 228 bases of 5' flanking DNA, the entire transcription unit, and 1.4 kilobases of 3' flanking sequences. The 3' region of the first repeated unit is joined to the 5' region of the second unit by a 6-base-pair segment we define as the novel joint. This joint forms part of a 10-base-pair inverted repeat of a segment within the 3' region of the first unit. Comparison of the sequences of the 5' and 3' boundaries revealed no extensive regions of similarity at a position corresponding to the novel joint, thus suggesting that a mechanism other than homologous recombination was involved in the origin of this duplication.

Metallothionein gene duplications and metal tolerance in natural populations of *Drosophila melanogaster*. (1987) (<https://pubmed.ncbi.nlm.nih.gov/2828157>)

RELATED GEPHE

No matches found.

No matches found.

EXTERNAL LINKS

COMMENTS