

## GEPHE SUMMARY

ebony ( <a +ebony+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=">https://www.gephebase.org/search-criteria?/and+Gene+Gephebase="+ebony+"#gephebase-summary-title</a> )	Gephebase Gene	GP00000249	GepheID
Published	Entry Status	Martin	Main curator

## PHENOTYPIC CHANGE

Morphology ( <a +morphology+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait+Category=">https://www.gephebase.org/search-criteria?/and+Trait+Category="+Morphology+"#gephebase-summary-title</a> )	Trait Category		
Coloration (thorax) ( <a +coloration+(thorax)+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait=">https://www.gephebase.org/search-criteria?/and+Trait="+Coloration+(thorax)+"#gephebase-summary-title</a> )	Trait		
Drosophila melanogaster -Mel6 (Benin)	Trait State in Taxon A		
Drosophila melanogaster - TW1 (Taiwan)	Trait State in Taxon B		
Data not curated	Ancestral State		
Intraspecific ( <a +intraspecific+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=">https://www.gephebase.org/search-criteria?/and+Taxonomic+Status="+Intraspecific+"#gephebase-summary-title</a> )	Taxonomic Status		
	Taxon A	Taxon B	
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</a> )	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</a> )	Latin Name
fruit fly	Common Name	fruit fly	Common Name
Sophophora melanogaster; fruit fly; Drosophila melanogaster Meigen, 1830; Sophophora melanogaster (Meigen, 1830); Drosophila melangaster	Synonyms	Sophophora melanogaster; fruit fly; Drosophila melanogaster Meigen, 1830; Sophophora melanogaster (Meigen, 1830); Drosophila melangaster	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; Acalyptratae; 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; Acalyptratae; Ephydroidea; Drosophilidae; Drosophilinae; Drosophilini; Drosophila; Sophophora; melanogaster group; melanogaster subgroup	Lineage
melanogaster subgroup () - (Rank: species subgroup) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=32351">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=32351</a> )	Parent	melanogaster subgroup () - (Rank: species subgroup) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=32351">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=32351</a> )	Parent
7227 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=7227">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=7227</a> )	NCBI Taxonomy ID	7227 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=7227">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=7227</a> )	NCBI Taxonomy ID
Yes	is Taxon A an Intraspecies?	Yes	is Taxon B an Intraspecies?
Drosophila melanogaster -Mel6 (Benin)	Taxon A Description	Drosophila melanogaster - TW1 (Taiwan)	Taxon B Description

## GENOTYPIC CHANGE

e	Generic Gene Name	UniProtKB Drosophila melanogaster
ebony; CG3331	Synonyms	O76858 ( <a href="http://www.uniprot.org/uniprot/O76858">http://www.uniprot.org/uniprot/O76858</a> )
-	String	AJ224446 ( <a href="https://www.ncbi.nlm.nih.gov/nucleotide/AJ224446">https://www.ncbi.nlm.nih.gov/nucleotide/AJ224446</a> )
-	Sequence Similarities	
GO:0000036 : acyl carrier activity ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0000036">https://www.ebi.ac.uk/QuickGO/term/GO:0000036</a> )	GO - Molecular Function	
GO:0003833 : beta-alanyl-dopamine synthase activity ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0003833">https://www.ebi.ac.uk/QuickGO/term/GO:0003833</a> )		
GO:0031177 : phosphantetheine binding		

(<https://www.ebi.ac.uk/QuickGO/term/GO:0031177>)

GO - Biological Process

- GO:0048085 : adult chitin-containing cuticle pigmentation  
(<https://www.ebi.ac.uk/QuickGO/term/GO:0048085>)
- GO:0042417 : dopamine metabolic process  
(<https://www.ebi.ac.uk/QuickGO/term/GO:0042417>)
- GO:0007623 : circadian rhythm (<https://www.ebi.ac.uk/QuickGO/term/GO:0007623>)
- GO:0048082 : regulation of adult chitin-containing cuticle pigmentation  
(<https://www.ebi.ac.uk/QuickGO/term/GO:0048082>)
- GO:0048066 : developmental pigmentation  
(<https://www.ebi.ac.uk/QuickGO/term/GO:0048066>)
- GO:0043042 : amino acid adenylation by nonribosomal peptide synthase  
(<https://www.ebi.ac.uk/QuickGO/term/GO:0043042>)
- GO:0007593 : chitin-based cuticle sclerotization  
(<https://www.ebi.ac.uk/QuickGO/term/GO:0007593>)
- GO:0048067 : cuticle pigmentation (<https://www.ebi.ac.uk/QuickGO/term/GO:0048067>)
- GO:0001692 : histamine metabolic process  
(<https://www.ebi.ac.uk/QuickGO/term/GO:0001692>)
- GO:0045475 : locomotor rhythm (<https://www.ebi.ac.uk/QuickGO/term/GO:0045475>)
- GO:0006583 : melanin biosynthetic process from tyrosine  
(<https://www.ebi.ac.uk/QuickGO/term/GO:0006583>)
- GO:0048022 : negative regulation of melanin biosynthetic process  
(<https://www.ebi.ac.uk/QuickGO/term/GO:0048022>)
- GO:0042440 : pigment metabolic process  
(<https://www.ebi.ac.uk/QuickGO/term/GO:0042440>)

GO - Cellular Component

GO:0005737 : cytoplasm (<https://www.ebi.ac.uk/QuickGO/term/GO:0005737>)

Presumptive Null

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

Molecular Type

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

Aberration Type

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

Molecular Details of the Mutation

Not identified

Experimental Evidence

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

Main Reference

Natural variation of ebony gene controlling thoracic pigmentation in *Drosophila melanogaster*. (2007) (<https://pubmed.ncbi.nlm.nih.gov/17660557>)

Authors

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Abstract

We identified the causal genetic variation for the difference in the thoracic trident pigmentation intensity between two wild-derived strains of *Drosophila melanogaster*. It was found to be the difference in expression level of ebony, which codes for an enzyme in the melanin-synthesis pathway and has pleiotropic effects on vision and behavior.

Additional References

Pleiotropic effects of regulatory variation in tan result in correlation of two pigmentation traits in *Drosophila melanogaster*. (2018) (<https://pubmed.ncbi.nlm.nih.gov/29957826>)

RELATED GEPHE

Related Genes

5 (bab, bab1, tan, yellow, wingless (wg)) (<https://www.gephebase.org/search-criteria?/or+Taxon ID=^7227^/and+Trait=Coloration/and+groupHaplotypes=true#gephebase-summary-title>)

Related Haplotypes

2 (<https://www.gephebase.org/search-criteria?/or+Gene Gephebase=^ebony^/and+Taxon ID=^7227^/or+Gene Gephebase=^ebony^/and+Taxon ID=^7227^#gephebase-summary-title>)

EXTERNAL LINKS

COMMENTS

@Pleiotropy - <http://flybase.org/reports/FBa0219021>

