GEPHE SUMMARY

Gephebase Gene
smooth (https://www.gephebase.org/search-criteria?/and+Gene Gephebase=^smooth^#gephebase-summary-title)

GepheID
GP00001996

Entry Status
Published

Main curator
Courtier

PHENOTYPIC CHANGE

Trait Category
Morphology (https://www.gephebase.org/search-criteria?/and+Trait Category=^Morphology^#gephebase-summary-title)

Trait
Bristle number (abdomen) (https://www.gephebase.org/search-criteria?/and+Trait=^Bristle number (abdomen)^#gephebase-summary-title)

Trait State in Taxon A
Drosophila melanogaster

Trait State in Taxon B
Drosophila melanogaster - fewer bristles on the ventral abdomen - allele sm2

Ancestral State
Taxon A

Taxonomic Status
Intraspecific (https://www.gephebase.org/search-criteria?/and+Taxonomic Status=^Intraspecific^#gephebase-summary-title)

Taxon A

Latin Name
Drosophila melanogaster (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=^Drosophila melanogaster^#gephebase-summary-title)

Common Name
fruit fly

Synonyms
Sophophora melanogaster; fruit fly; Drosophila melanogaster Meigen, 1830; Sophophora melanogaster (Meigen, 1830); Drosophila melangaster

Rank
species

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

Parent
melanogaster subgroup () - (Rank: species subgroup) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 32351)

NCBI Taxonomy ID
7227 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 7227)

is Taxon A an Infraspecies?
No

Taxon B

Latin Name
Drosophila melanogaster (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=^Drosophila melanogaster^#gephebase-summary-title)

Common Name
fruit fly

Synonyms
Sophophora melanogaster; fruit fly; Drosophila melanogaster Meigen, 1830; Sophophora melanogaster (Meigen, 1830); Drosophila melangaster

Rank
species

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

Parent
melanogaster subgroup () - (Rank: species subgroup) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 32351)

NCBI Taxonomy ID
7227 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 7227)

is Taxon B an Infraspecies?
No

GENOTYPIC CHANGE

Generic Gene Name
-

Synonyms
-

String
-

Sequence Similarities
-

GO - Molecular Function
-

GO - Biological Process
-

GO - Cellular Component
-

UniProtKB
()

GenebankID or UniProtKB
()

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

exact causing mutation(s) unknown

Experimental Evidence

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

Main Reference

Genetic and molecular analysis of smooth, a quantitative trait locus affecting bristle number in Drosophila melanogaster. (1997) (https://pubmed.ncbi.nlm.nih.gov/9178010)

Authors

zur Lage P; Shrimpton AD; Flavell AJ; Mackay TF; Brown AJ

Abstract

A semi-lethal, sterile allele of the smooth locus (2-91.5), sm3, was discovered in an artificial selection line for low abdominal bristle number that had been started from a P-M dysgenic cross. The fitness effects and extremely low bristle number phenotype of the allele could not be separated by recombination from a P-element insertion at cytological location 56E, and precise excision of the P-element at this site was associated with reversion to wild type. The smooth gene was cloned using the P-element insertion as a tag. The gene encodes a 2.6-kb transcript derived from 10 exons and covers a genomic region of at least 80 kb. The Drosophila smooth gene shares substantial sequence identity with a group of RNA binding proteins, with the closest relationship being to the human heterogeneous nuclear ribonucleoprotein L gene. The smooth gene is by definition an abdominal bristle number quantitative trait locus, but further work is required to discern whether naturally occurring allelic variation at this locus is a source of genetic variation for abdominal bristle number in natural populations.

Additional References

RELATED GEPHE

Related Genes

7 (achaete-scute complex, Delta, Dopa-decarboxylase, hairy (h), poils au dos (pad), scabrous, Catecholamines up) (https://www.gephebase.org/search-criteria?/or+Taxon ID=^7227^/and+Trait=Bristle number/and+groupHaplotypes=true#gephebase-summary-title)

Related Haplotypes

No matches found.

EXTERNAL LINKS

COMMENTS

No UniProtKB entry for this protein (Dmel\sm, CG9218, FBgn0003435) - http://flybase.org/reports/FBal0015721