

GEPHE SUMMARY

	Gephebase Gene	GephelD
poils au dos (pad) (https://www.gephebase.org/search-criteria?/and+Gene Gephebase="poils au dos (pad)"#gephebase-summary-title)	GP00000915	Main curator
	Entry Status	Martin
Published		

PHENOTYPIC CHANGE

	Trait Category	
Morphology (https://www.gephebase.org/search-criteria?/and+Trait Category="Morphology">#gephebase-summary-title)		Trait
Bristle number (thorax) (https://www.gephebase.org/search-criteria?/and+Trait=^Bristle number (thorax)"#gephebase-summary-title)		Trait State in Taxon A
Drosophila melanogaster		Trait State in Taxon B
Drosophila melanogaster - Marrakesh		Ancestral State
Taxon A		Taxonomic Status
Intraspecific (https://www.gephebase.org/search-criteria?/and+Taxonomic Status="Intraspecific">#gephebase-summary-title)		

Taxon A	Latin Name	Taxon B	Latin Name
Drosophila melanogaster (#gephebase-summary-title")		Drosophila melanogaster (#gephebase-summary-title")	
fruit fly	Common Name	fruit fly	Common Name
Sophophora melanogaster; fruit fly; Drosophila melanogaster Meigen, 1830; Sophophora melanogaster (Meigen, 1830); Drosophila melanogaster	Synonyms	Sophophora melanogaster; fruit fly; Drosophila melanogaster Meigen, 1830; Sophophora melanogaster (Meigen, 1830); Drosophila melanogaster	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; Ephydriodea; 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; Ephydriodea; 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	7227 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=7227)	NCBI Taxonomy ID
No	is Taxon A an Infraspecies?	Yes	is Taxon B an Infraspecies?
		Drosophila melanogaster - Marrakesh	Taxon B Description

GENOTYPIC CHANGE

	Generic Gene Name	UniProtKB Drosophila melanogaster
pad	Synonyms	Q9VEW6 (http://www.uniprot.org/uniprot/Q9VEW6)
CG10309; Dmel\CG10309; Dmel_CG10309	String	GenebankID or UniProtKB
7227.FBpp0290729 (http://string-db.org/newstring_cgi/show_network_section.pl?identifier=7227.FBpp0290729)	Sequence Similarities	BT022205 (https://www.ncbi.nlm.nih.gov/nuccore/BT022205)
-	GO - Molecular Function	
GO:0008270 : zinc ion binding (https://www.ebi.ac.uk/QuickGO/term/GO:0008270)		
GO:0003677 : DNA binding (https://www.ebi.ac.uk/QuickGO/term/GO:0003677)		

GO - Biological Process

GO:0008407 : chaeta morphogenesis

(<https://www.ebi.ac.uk/QuickGO/term/GO:0008407>)

GO:0000122 : negative regulation of transcription by RNA polymerase II

(<https://www.ebi.ac.uk/QuickGO/term/GO:0000122>)

GO - Cellular Component

GO:0005634 : nucleus (<https://www.ebi.ac.uk/QuickGO/term/GO:0005634>)

Presumptive Null

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

Molecular Type

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

Aberration Type

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

Deletion Size

10-99 bp

Molecular Details of the Mutation

29bp deletion

Experimental Evidence

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

Main Reference

A major bristle QTL from a selected population of Drosophila uncovers the zinc-finger transcription factor poils-au-dos, a repressor of achaete-scute. (2005)
(<https://pubmed.ncbi.nlm.nih.gov/16216235>)

Authors

Gibert JM; Marcellini S; David JR; SchlÃ¶tterer C; Simpson P

Abstract

Traditional screens aiming at identifying genes regulating development have relied on mutagenesis. Here, we describe a new gene involved in bristle development, identified through the use of natural variation and selection. *Drosophila melanogaster* bears a pattern of 11 macrochaetes per heminotum. From a population initially sampled in Marrakech, a strain was selected for an increased number of thoracic macrochaetes. Using recombination and single nucleotide polymorphisms, the factor responsible was mapped to a single locus on the third chromosome, *poils au dos*, that encodes a zinc-finger-ZAD protein. The original, as well as new, presumed null, alleles of *poils au dos*, is associated with ectopic achaete-scute expression that results in the additional bristles. This suggests a possible role for *Poils au dos* as a repressor of achaete and scute. Ectopic expression appears to be independent of the activity of known cis-regulatory enhancer sequences at the achaete-scute complex that mediate activation at specific sites on the notum. The target sequences for *Poils au dos* activity were mapped to a 14 kb region around *scute*. In addition, we show that *pad* interacts synergistically with the repressor *hairy* and with *Dpp* signaling in posterior and anterior regions of the notum, respectively.

Additional References

RELATED GEPHE

Related Genes

7 (achaete-scute complex, Delta, Dopa-decarboxylase, hairy (h), scabrous, smooth, Catecholamines up) (<https://www.gephebase.org/search-criteria?/or+TaxonID=%7227%/and+Trait=Bristle+number/and+groupHaplotypes=true#gephebase-summary-title>)

Related Haplotypes

No matches found.

EXTERNAL LINKS

COMMENTS

<http://flybase.org/reports/FBal0189942>