

GEPHE SUMMARY

Lectin-24A (#gephebase-summary-title)	Gephebase Gene	GP00002658	GepheID
Published	Entry Status	Courtier	Main curator

PHENOTYPIC CHANGE

Physiology (#gephebase-summary-title)	Trait Category		
Pathogen resistance (parasitic wasp) (https://www.gephebase.org/search-criteria?/and+Trait=Pathogen resistance (parasitic wasp)#gephebase-summary-title)	Trait		
Drosophila melanogaster - resistant	Trait State in Taxon A		
Drosophila melanogaster - lost the resistance	Trait State in Taxon B		
Taxon A	Ancestral State		
Intraspecific (#gephebase-summary-title)	Taxonomic Status		
	Taxon A		Taxon B
Drosophila melanogaster (#gephebase-summary-title)	Latin Name	Drosophila melanogaster (#gephebase-summary-title)	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) (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 Intraspecies?	No	is Taxon B an Intraspecies?

GENOTYPIC CHANGE

lectin-24A	Generic Gene Name	UniProtKB Drosophila melanogaster
AC 005149A; AC005149a; CG3410; Dmel\CG3410; lectin-24A-RA; Dmel_LCG3410	Synonyms	Q9VQU4 (http://www.uniprot.org/uniprot/Q9VQU4)
7227.FBpp0077228 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=7227.FBpp0077228)	String	GenebankID or UniProtKB
-	Sequence Similarities	
GO:0030246 : carbohydrate binding (https://www.ebi.ac.uk/QuickGO/term/GO:0030246)	GO - Molecular Function	
GO:0005534 : galactose binding (https://www.ebi.ac.uk/QuickGO/term/GO:0005534)	GO - Biological Process	
GO:0016339 : calcium-dependent cell-cell adhesion via plasma membrane cell adhesion		

molecules (<https://www.ebi.ac.uk/QuickGO/term/GO:0016339>)

GO:0043152 : induction of bacterial agglutination
(<https://www.ebi.ac.uk/QuickGO/term/GO:0043152>)

GO - Cellular Component

GO:0005576 : extracellular region (<https://www.ebi.ac.uk/QuickGO/term/GO:0005576>)

GO:0009897 : external side of plasma membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0009897>)

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

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

SNP Coding Change

Nonsense

Molecular Details of the Mutation

Q254 >STOP - point mutation that introduces a premature stop codon

Experimental Evidence

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

	Taxon A	Taxon B	Position
Codon	-	-	-
Amino-acid	Gln	STP	254

Main Reference

Recurrent loss of an immunity gene that protects *Drosophila* against a major natural parasite . (2022) (<https://pubmed.ncbi.nlm.nih.gov/00000000.000050>)

Authors

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Abstract

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Additional References

RELATED GEPHE

Related Genes

15 (18-wheeler, CG8492, Dipteracin, Drosomycin-like 5, Ge-1, GNBP1, GNBP2, Immune deficiency, pastrel, PGRP-LC, ref(2)P, SR-CII, Tehao, Ubiquitin conjugating enzyme E2H (Ubc-E2H), CHKov1) (<https://www.gephebase.org/search-criteria?/or+Taxon+ID=~7227^/and+Trait=Pathogen+resistance/and+groupHaplotypes=true#gephebase-summary-title>)

Related Haplotypes

4 (<https://www.gephebase.org/search-criteria?/or+Gene+Gephebase=~Lectin-24A^/and+Taxon+ID=~7227^/or+Gene+Gephebase=~Lectin-24A^/and+Taxon+ID=~7227^#gephebase-summary-title>)

EXTERNAL LINKS

COMMENTS

Lectin-24A is important in the immune response that protects fruit flies against one of their main natural enemies—parasitic wasps. This immune defiance appears to be costly. Many flies carry mutated copies of this gene that are no longer functional. @BioRxiv @CRISPR