

GEPHE SUMMARY

	Gephebase Gene		GepheID
Immune deficiency (https://www.gephebase.org/search-criteria?/and+GeneGephebase=^Immune+deficiency^#gephebase-summary-title)	GP00000499		
	Entry Status	Martin	Main curator
Published			

PHENOTYPIC CHANGE

	Trait Category		
Physiology (https://www.gephebase.org/search-criteria?/and+TraitCategory=^Physiology^#gephebase-summary-title)		Trait	
Pathogen resistance (https://www.gephebase.org/search-criteria?/and+Trait=^Pathogen+resistance^#gephebase-summary-title)			
	Trait State in Taxon A		
Drosophila melanogaster		Trait State in Taxon B	
Drosophila melanogaster			
	Ancestral State		
Data not curated		Taxonomic Status	
Intraspecific (https://www.gephebase.org/search-criteria?/and+TaxonomicStatus=^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
imd		Q9NHG0 (http://www.uniprot.org/uniprot/Q9NHG0)	
	Synonyms		GenebankID or UniProtKB
anon-WO0172774.166; BG5; CG5576; Dmel\CG5576; lmd; IMD; shadok		AF222006 (https://www.ncbi.nlm.nih.gov/nuccore/AF222006)	
	String		
7227.FBpp0085904 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=7227.FBpp0085904)			
	Sequence Similarities		
-			
	GO - Molecular Function		
GO:0070513 : death domain binding (https://www.ebi.ac.uk/QuickGO/term/GO:0070513)			
	GO - Biological Process		
GO:0019731 : antibacterial humoral response (https://www.ebi.ac.uk/QuickGO/term/GO:0019731)			

GO:0006952 : defense response (<https://www.ebi.ac.uk/QuickGO/term/GO:0006952>)
GO:0006955 : immune response (<https://www.ebi.ac.uk/QuickGO/term/GO:0006955>)
GO:0045087 : innate immune response
(<https://www.ebi.ac.uk/QuickGO/term/GO:0045087>)
GO:0009617 : response to bacterium (<https://www.ebi.ac.uk/QuickGO/term/GO:0009617>)
GO:0007399 : nervous system development
(<https://www.ebi.ac.uk/QuickGO/term/GO:0007399>)
GO:0042742 : defense response to bacterium
(<https://www.ebi.ac.uk/QuickGO/term/GO:0042742>)
GO:0050829 : defense response to Gram-negative bacterium
(<https://www.ebi.ac.uk/QuickGO/term/GO:0050829>)
GO:0045089 : positive regulation of innate immune response
(<https://www.ebi.ac.uk/QuickGO/term/GO:0045089>)
GO:0019730 : antimicrobial humoral response
(<https://www.ebi.ac.uk/QuickGO/term/GO:0019730>)
GO:0006959 : humoral immune response
(<https://www.ebi.ac.uk/QuickGO/term/GO:0006959>)
GO:0035556 : intracellular signal transduction
(<https://www.ebi.ac.uk/QuickGO/term/GO:0035556>)
GO:0061057 : peptidoglycan recognition protein signaling pathway
(<https://www.ebi.ac.uk/QuickGO/term/GO:0061057>)
GO:0006963 : positive regulation of antibacterial peptide biosynthetic process
(<https://www.ebi.ac.uk/QuickGO/term/GO:0006963>)
GO:0006964 : positive regulation of biosynthetic process of antibacterial peptides active against Gram-negative bacteria (<https://www.ebi.ac.uk/QuickGO/term/GO:0006964>)
GO:0002230 : positive regulation of defense response to virus by host
(<https://www.ebi.ac.uk/QuickGO/term/GO:0002230>)

GO - Cellular Component

GO:0005829 : cytosol (<https://www.ebi.ac.uk/QuickGO/term/GO:0005829>)

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

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

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

unknown

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

Genetic basis of natural variation in *D. melanogaster* antibacterial immunity. (2004) (<https://pubmed.ncbi.nlm.nih.gov/15031506>)

Lazzaro BP; Scurman BK; Clark AG

Many genes involved in *Drosophila melanogaster* innate immune processes have been identified, but whether naturally occurring polymorphism in these genes leads to variation in immune competence among wild flies has not been tested. We report here substantial variability among wild-derived *D. melanogaster* in the ability to suppress infection by a Gram-negative entomopathogen, *Serratia marcescens*. Variability in immune competence was significantly associated with nucleotide polymorphism in 16 innate immunity genes, corresponding primarily to pathogen recognition and intracellular signaling loci, and substantial epistasis was detected between intracellular signaling and antimicrobial peptide genes. Variation in these genes, therefore, seems to drive variability in immunocompetence among wild *Drosophila*.

RELATED GEPHE

15 (18-wheeler, CG8492, Dipteracin, Drosomycin-like 5, Ge-1, GNBp1, GNBp2, Lectin-24A, 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>)

No matches found.

EXTERNAL LINKS

COMMENTS

@Epistasis

