

GEPHE SUMMARY

	Gephebase Gene		GepheID
Acetylcholinesterase (Ace-1) (https://www.gephebase.org/search-criteria?/and+Gene)		GP00002589	
Gephebase= [^] Acetylcholinesterase (Ace-1) [^] #gephebase-summary-title			Main curator
	Entry Status	Courtier	
Published			

PHENOTYPIC CHANGE

	Trait Category		
Physiology (https://www.gephebase.org/search-criteria?/and+Trait)			
Category= [^] Physiology [^] #gephebase-summary-title			
	Trait		
Xenobiotic resistance (insecticide) (<a href="https://www.gephebase.org/search-criteria?/and+Trait=<sup>^</sup>Xenobiotic resistance (insecticide)<sup>^</sup>#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Trait=[^]Xenobiotic resistance (insecticide)[^]#gephebase-summary-title)			
	Trait State in Taxon A		
Nilaparvata lugens -sensitive			
	Trait State in Taxon B		
Nilaparvata lugens - resistant			
	Ancestral State		
Taxon A			
	Taxonomic Status		
Intraspecific (https://www.gephebase.org/search-criteria?/and+Taxonomic)			
Status= [^] Intraspecific [^] #gephebase-summary-title			
	Taxon A	Taxon B	
	Latin Name		Latin Name
Nilaparvata lugens		Nilaparvata lugens	
(<a href="https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=<sup>^</sup>Nilaparvata lugens<sup>^</sup>#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=[^]Nilaparvata lugens[^]#gephebase-summary-title)		(<a href="https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=<sup>^</sup>Nilaparvata lugens<sup>^</sup>#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=[^]Nilaparvata lugens[^]#gephebase-summary-title)	
	Common Name		Common Name
brown planthopper		brown planthopper	
	Synonyms		Synonyms
brown planthopper; Nilaparvata lugens (Stal, 1854); Nalaparvata lugens		brown planthopper; Nilaparvata lugens (Stal, 1854); Nalaparvata lugens	
	Rank		Rank
species		species	
	Lineage		Lineage
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Protostomia; Ecdysozoa; Panarthropoda; Arthropoda; Mandibulata; Pancrustacea; Hexapoda; Insecta; Dicondylia; Pterygota; Neoptera; Paraneoptera; Hemiptera; Auchenorrhyncha; Fulgoromorpha; Fulgoroidea; Delphacidae; Delphacinae; Nilaparvata		cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Protostomia; Ecdysozoa; Panarthropoda; Arthropoda; Mandibulata; Pancrustacea; Hexapoda; Insecta; Dicondylia; Pterygota; Neoptera; Paraneoptera; Hemiptera; Auchenorrhyncha; Fulgoromorpha; Fulgoroidea; Delphacidae; Delphacinae; Nilaparvata	
	Parent		Parent
Nilaparvata () - (Rank: genus)		Nilaparvata () - (Rank: genus)	
(https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=108930)		(https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=108930)	
	NCBI Taxonomy ID		NCBI Taxonomy ID
108931		108931	
(https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=108931)		(https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=108931)	
	is Taxon A an Intraspecies?		is Taxon B an Intraspecies?
No		No	

GENOTYPIC CHANGE

	Generic Gene Name		UniProtKB Drosophila melanogaster
Ace		P07140 (http://www.uniprot.org/uniprot/P07140)	
	Synonyms		GenebankID or UniProtKB
AcChE; ace; ACE; ace-2; ache; AchE; AchE; CG17907; CHE; dAcChE; dmAcChE; DmAcChE; Dmel\CG17907; Dm_ace; FBgn0000024; l(3)26; l(3)87Ed		()	
	String		
7227.FBpp0289713			
(http://string-db.org/newstring.cgi/show_network_section.pl?identifier=7227.FBpp0289713)			
	Sequence Similarities		
Belongs to the type-B carboxylesterase/lipase family.			
	GO - Molecular Function		
GO:0042803 : protein homodimerization activity			
(https://www.ebi.ac.uk/QuickGO/term/GO:0042803)			
GO:0003990 : acetylcholinesterase activity			
(https://www.ebi.ac.uk/QuickGO/term/GO:0003990)			
GO:0004104 : cholinesterase activity (https://www.ebi.ac.uk/QuickGO/term/GO:0004104)			
GO:0043199 : sulfate binding (https://www.ebi.ac.uk/QuickGO/term/GO:0043199)			

GO - Biological Process

GO:0006581 : acetylcholine catabolic process
 (https://www.ebi.ac.uk/QuickGO/term/GO:0006581)
 GO:0001507 : acetylcholine catabolic process in synaptic cleft
 (https://www.ebi.ac.uk/QuickGO/term/GO:0001507)
 GO:0007268 : chemical synaptic transmission
 (https://www.ebi.ac.uk/QuickGO/term/GO:0007268)
 GO:0042426 : choline catabolic process
 (https://www.ebi.ac.uk/QuickGO/term/GO:0042426)
 GO:0042331 : phototaxis (https://www.ebi.ac.uk/QuickGO/term/GO:0042331)

GO - Cellular Component

GO:0005886 : plasma membrane (https://www.ebi.ac.uk/QuickGO/term/GO:0005886)
 GO:0005737 : cytoplasm (https://www.ebi.ac.uk/QuickGO/term/GO:0005737)
 GO:0031225 : anchored component of membrane
 (https://www.ebi.ac.uk/QuickGO/term/GO:0031225)
 GO:0030054 : cell junction (https://www.ebi.ac.uk/QuickGO/term/GO:0030054)
 GO:0043083 : synaptic cleft (https://www.ebi.ac.uk/QuickGO/term/GO:0043083)

No (https://www.gephebase.org/search-criteria?/and+Presumptive Null=^No^#gephebase-summary-title) Presumptive Null
 Coding (https://www.gephebase.org/search-criteria?/and+Molecular Type=^Coding^#gephebase-summary-title) Molecular Type
 SNP (https://www.gephebase.org/search-criteria?/and+Aberration Type=^SNP^#gephebase-summary-title) Aberration Type
 Nonsynonymous SNP Coding Change
 F330S Molecular Details of the Mutation
 Candidate Gene (https://www.gephebase.org/search-criteria?/and+Experimental Evidence=^Candidate Gene^#gephebase-summary-title) Experimental Evidence

	Taxon A	Taxon B	Position
Codon	-	-	-
Amino-acid	-	-	-

Cloning of the acetylcholinesterase 1 gene and identification of point mutations putatively associated with carbofuran resistance in *Nilaparvata lugens*. (2012) (https://pubmed.ncbi.nlm.nih.gov/00000000.000041) Main Reference
 Kwon Deok Ho; Cha Deok Jea; Kim Young Ho; Lee Si Woo; Lee Si Hyeock Authors
 - Abstract
 Genotype to phenotype, the molecular and physiological dimensions of resistance in arthropods. (2015) (https://pubmed.ncbi.nlm.nih.gov/26047113) Additional References

RELATED GEPHE

4 (CYP6AY1, CYP6ER1, esterase NI-EST1, GST) (https://www.gephebase.org/search-criteria?/or+Taxon ID=^108931^/and+Trait=Xenobiotic resistance/and+groupHaplotypes=true#gephebase-summary-title) Related Genes
 1 (https://www.gephebase.org/search-criteria?/or+Gene Gephebase=^Acetylcholinesterase (Ace-1)^/and+Taxon ID=^108931^/or+Gene Gephebase=^Acetylcholinesterase (Ace-1)^/and+Taxon ID=^108931^#gephebase-summary-title) Related Haplotypes

EXTERNAL LINKS

COMMENTS

