

GEPHE SUMMARY

	Gephebase Gene		GepheID
Acetylcholinesterase (Ace-2) (https://www.gephebase.org/search-criteria?/and+Gene)		GP00002569	
Gephebase="Acetylcholinesterase (Ace-2)"#gephebase-summary-title)			Main curator
Published	Entry Status	Courtier	

PHENOTYPIC CHANGE

	Trait Category	
Physiology (https://www.gephebase.org/search-criteria?/and+Trait)		
Category="Physiology"#gephebase-summary-title)	Trait	
Xenobiotic resistance (insecticide) (<a #gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait=Xenobiotic+resistance+(insecticide)">https://www.gephebase.org/search-criteria?/and+Trait=Xenobiotic+resistance+(insecticide)"#gephebase-summary-title)		
	Trait State in Taxon A	
Aphis gossypii - sensitive		
	Trait State in Taxon B	
Aphis gossypii - resistant		
	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
Aphis gossypii (<a #gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=Aphis+gossypii">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=Aphis+gossypii"#gephebase-summary-title)		Aphis gossypii (<a #gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=Aphis+gossypii">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=Aphis+gossypii"#gephebase-summary-title)	
	Common Name		Common Name
cotton aphid		cotton aphid	
	Synonyms		Synonyms
cotton aphid; melon aphid; Aphis gossypii Glover, 1877; Aphis gossypii		cotton aphid; melon aphid; Aphis gossypii Glover, 1877; Aphis gossypii	
	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; Sternorrhyncha; Aphidomorpha; Aphidoidea; Aphididae; Aphidinae; Aphidini; Aphis; Aphis		cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Protostomia; Ecdysozoa; Panarthropoda; Arthropoda; Mandibulata; Pancrustacea; Hexapoda; Insecta; Dicondylia; Pterygota; Neoptera; Paraneoptera; Hemiptera; Sternorrhyncha; Aphidomorpha; Aphidoidea; Aphididae; Aphidinae; Aphidini; Aphis; Aphis	
	Parent		Parent
Aphis () - (Rank: subgenus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=464929)		Aphis () - (Rank: subgenus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=464929)	
	NCBI Taxonomy ID		NCBI Taxonomy ID
80765 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=80765)		80765 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=80765)	
	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](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](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](https://www.gephebase.org/search-criteria?/and+Aberration+Type+SNP^#gephebase-summary-title)) Aberration Type
- Nonsynonymous SNP Coding Change
- F78L Molecular Details of the Mutation
- Candidate Gene ([https://www.gephebase.org/search-criteria?/and+Experimental Evidence=^Candidate Gene^#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Experimental+Evidence+Candidate+Gene^#gephebase-summary-title)) Experimental Evidence

	Taxon A	Taxon B	Position
Codon	-	-	-
Amino-acid	Phe	Leu	78

- Mutations in acetylcholinesterase associated with insecticide resistance in the cotton aphid, *Aphis gossypii* Glover . (2004) (<https://pubmed.ncbi.nlm.nih.gov/00000000.000040>) Main Reference
- Li Fei; Han Zhaojun 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

- 3 (Acetylcholinesterase (Ace-1), nAChR, para (kdr)) ([https://www.gephebase.org/search-criteria?/or+Taxon ID=^80765^/and+Trait=Xenobiotic resistance/and+groupHaplotypes=true#gephebase-summary-title](https://www.gephebase.org/search-criteria?/or+Taxon+ID+80765^/and+Trait=Xenobiotic+resistance/and+groupHaplotypes=true#gephebase-summary-title)) Related Genes
- No matches found. Related Haplotypes

EXTERNAL LINKS

COMMENTS

