

GEPHE SUMMARY

ABCC2 (https://www.gephebase.org/search-criteria?/and+Gene Gephebase=^ABCC2^#gephebase-summary-title)	Gephebase Gene	GP00000014	GephelD
Published	Entry Status	Martin	Main curator

PHENOTYPIC CHANGE

Trait Category	
Physiology (https://www.gephebase.org/search-criteria?/and+Trait Category=^Physiology^#gephebase-summary-title)	Trait
Xenobiotic resistance (insecticide; Bt Cry1Ac) (https://www.gephebase.org/search-criteria?/and+Trait=^Xenobiotic+resistance+(insecticide;+Bt+Cry1Ac)^#gephebase-summary-title)	Trait State in Taxon A
Trichoplusia ni -Bt susceptible	Trait State in Taxon B
Trichoplusia ni -Bt 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
Trichoplusia ni (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Trichoplusia+ni^#gephebase-summary-title)		Trichoplusia ni (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Trichoplusia+ni^#gephebase-summary-title)	
cabbage looper	Common Name	cabbage looper	Common Name
cabbage looper; Trichoplusia ni (Hubner, 1803); Trichoplusia ni; Trichoplusia ni	Synonyms	cabbage looper; Trichoplusia ni (Hubner, 1803); Trichoplusia ni; Trichoplusia ni	Synonyms
species	Rank	species	Rank
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Protostomia; Ecdysozoa; Panarthropoda; Arthropoda; Mandibulata; Pancrustacea; Hexapoda; Insecta; Dicondylia; Pterygota; Neoptera; Holometabola; Amphiesmenoptera; Lepidoptera; Glossata; Neolepidoptera; Heteroneura; Ditrysia; Obtectomera; Noctuoidea; Noctuidae; Plusiinae; Trichoplusia	Lineage	cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Protostomia; Ecdysozoa; Panarthropoda; Arthropoda; Mandibulata; Pancrustacea; Hexapoda; Insecta; Dicondylia; Pterygota; Neoptera; Holometabola; Amphiesmenoptera; Lepidoptera; Glossata; Neolepidoptera; Heteroneura; Ditrysia; Obtectomera; Noctuoidea; Noctuidae; Plusiinae; Trichoplusia	Lineage
Trichoplusia () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 7110)	Parent	Trichoplusia () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 7110)	Parent
7111 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 7111)	NCBI Taxonomy ID	7111 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 7111)	NCBI Taxonomy ID
is Taxon A an Infraspecies?		is Taxon B an Infraspecies?	
No		No	

GENOTYPIC CHANGE

ABCC2	Generic Gene Name	UniProtKB Plutella xylostella
-	Synonyms	A0A0E3ZDK3 (http://www.uniprot.org/uniprot/A0A0E3ZDK3)
-	String	GenebankID or UniProtKB
-	Sequence Similarities	AEI27595 (https://www.ncbi.nlm.nih.gov/nuccore/AEI27595)
-	GO - Molecular Function	
GO:0005524 : ATP binding (https://www.ebi.ac.uk/QuickGO/term/GO:0005524)		
GO:0042626 : ATPase activity, coupled to transmembrane movement of substances (https://www.ebi.ac.uk/QuickGO/term/GO:0042626)		
-	GO - Biological Process	
GO:0016021 : integral component of membrane	GO - Cellular Component	

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

Molecular Type

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

Aberration Type

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

Molecular Details of the Mutation

Not identified

Experimental Evidence

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

Main Reference

Parallel evolution of *Bacillus thuringiensis* toxin resistance in lepidoptera. (2011) (<https://pubmed.ncbi.nlm.nih.gov/21840855>)

Authors

Baxter SW; Badenes-Perez FR; Morrison A; Vogel H; Crickmore N; Kain W; Wang P; Heckel DG; Jiggins CD

Abstract

Despite the prominent and worldwide use of *Bacillus thuringiensis* (Bt) insecticidal toxins in agriculture, knowledge of the mechanism by which they kill pests remains incomplete. Here we report genetic mapping of a membrane transporter (ABCC2) to a locus controlling Bt Cry1Ac toxin resistance in two lepidopterans, implying that this protein plays a critical role in Bt function.

Additional References

RELATED GEPHE

Related Genes

1 (ABCA2) (<https://www.gephebase.org/search-criteria?/or+Taxon+ID=^7111^/and+Trait=Xenobiotic+resistance/and+groupHaplotypes=true#gephebase-summary-title>)

Related Haplotypes

No matches found.

EXTERNAL LINKS

COMMENTS