

## GEPHE SUMMARY

ABCC2 ( <a href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=^ABCC2^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=^ABCC2^#gephebase-summary-title</a> )	Gephebase Gene	GP00000013	GepheID
Published	Entry Status	Martin	Main curator

## PHENOTYPIC CHANGE

Physiology ( <a href="https://www.gephebase.org/search-criteria?/and+Trait+Category=^Physiology^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Trait+Category=^Physiology^#gephebase-summary-title</a> )	Trait Category		
Xenobiotic resistance (insecticide) ( <a href="https://www.gephebase.org/search-criteria?/and+Trait=^Xenobiotic+resistance+(insecticide)^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Trait=^Xenobiotic+resistance+(insecticide)^#gephebase-summary-title</a> )	Trait		
Plutella xylostella -Bt susceptible	Trait State in Taxon A		
Plutella xylostella -Bt resistant	Trait State in Taxon B		
Taxon A	Ancestral State		
Intraspecific ( <a href="https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=^Intraspecific^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=^Intraspecific^#gephebase-summary-title</a> )	Taxonomic Status		
	Taxon A	Taxon B	
Plutella xylostella ( <a href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Plutella+xylostella^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Plutella+xylostella^#gephebase-summary-title</a> )	Latin Name	Plutella xylostella ( <a href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Plutella+xylostella^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Plutella+xylostella^#gephebase-summary-title</a> )	Latin Name
diamondback moth	Common Name	diamondback moth	Common Name
diamondback moth; cabbage moth; Plutella xylostella (Linnaeus, 1758); Putella xylostella species	Synonyms	diamondback moth; cabbage moth; Plutella xylostella (Linnaeus, 1758); Putella xylostella species	Synonyms
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Protostomia; Ecdysozoa; Panarthropoda; Arthropoda; Mandibulata; Pancrustacea; Hexapoda; Insecta; Dicondylia; Pterygota; Neoptera; Holometabola; Amphimesnoptera; Lepidoptera; Glossata; Neolepidoptera; Heteroneura; Dityrsia; Yponomeutoidea; Plutellidae; Plutella	Rank	cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Protostomia; Ecdysozoa; Panarthropoda; Arthropoda; Mandibulata; Pancrustacea; Hexapoda; Insecta; Dicondylia; Pterygota; Neoptera; Holometabola; Amphimesnoptera; Lepidoptera; Glossata; Neolepidoptera; Heteroneura; Dityrsia; Yponomeutoidea; Plutellidae; Plutella	Rank
Plutella () - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=51654">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=51654</a> )	Lineage	Plutella () - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=51654">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=51654</a> )	Lineage
51655 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=51655">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=51655</a> )	Parent	51655 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=51655">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=51655</a> )	Parent
No	NCBI Taxonomy ID	No	NCBI Taxonomy ID
	is Taxon A an Intraspecies?		is Taxon B an Intraspecies?

## GENOTYPIC CHANGE

ABCC2	Generic Gene Name	A0A0E3ZDK3 ( <a href="http://www.uniprot.org/uniprot/A0A0E3ZDK3">http://www.uniprot.org/uniprot/A0A0E3ZDK3</a> )	UniProtKB Plutella xylostella
-	Synonyms	KM245561 ( <a href="https://www.ncbi.nlm.nih.gov/nuccore/KM245561">https://www.ncbi.nlm.nih.gov/nuccore/KM245561</a> )	GenebankID or UniProtKB
-	String		
-	Sequence Similarities		
-	GO - Molecular Function		
GO:0005524 : ATP binding ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0005524">https://www.ebi.ac.uk/QuickGO/term/GO:0005524</a> )			
GO:0042626 : ATPase activity, coupled to transmembrane movement of substances ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0042626">https://www.ebi.ac.uk/QuickGO/term/GO:0042626</a> )			
-	GO - Biological Process		
-	GO - Cellular Component		
GO:0016021 : integral component of membrane ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0016021">https://www.ebi.ac.uk/QuickGO/term/GO:0016021</a> )			

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

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

Deletion Size

10-99 bp

Molecular Details of the Mutation

30bp deletion

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-PÃ©rez 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

10 (Acetylcholinesterase (Ace-1), Chitin synthase 1 (CHS1), CYP6BG1, FMO2, glutamate-gated chloride channel (GluCl), MAP4K4, nAChR, para (kdr), resistance to dieldrin, RYR) (<https://www.gephebase.org/search-criteria?/or+Taxon ID=^51655^/and+Trait=Xenobiotic resistance/and+groupHaplotypes=true#gephebase-summary-title>)

Related Haplotypes

No matches found.

## EXTERNAL LINKS

## COMMENTS