GEPHE SUMMARY

Gephebase Gene
ABCC2

GephelD
GP00000013

Entry Status
Published

Main curator
Martin

PHENOTYPIC CHANGE

Trait Category
Physiology

Trait
Xenobiotic resistance (insecticide)

Trait State in Taxon A
Plutella xylostella -Bt susceptible

Trait State in Taxon B
Plutella xylostella -Bt resistant

Ancestral State
Taxon A

Taxonomic Status
Intraspecific

Taxon A

Latin Name
Plutella xylostella

Common Name
diamondback moth

Synonyms
diamondback moth; cabbage moth; Plutella xylostella (Linnaeus, 1758); Putella xylostella

Rank
species

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; Yponomeutoidea; Plutellidae; Plutella

Parent
Plutella () - (Rank: genus)

NCBI Taxonomy ID
51655

is Taxon A an Infraspecies?
No

Taxon B

Latin Name
Plutella xylostella

Common Name
diamondback moth

Synonyms
diamondback moth; cabbage moth; Plutella xylostella (Linnaeus, 1758); Putella xylostella

Rank
species

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; Yponomeutoidea; Plutellidae; Plutella

Parent
Plutella () - (Rank: genus)

NCBI Taxonomy ID
51655

is Taxon B an Infraspecies?
No

GENOTYPIC CHANGE

Generic Gene Name
ABCC2

Synonyms
-

String
-

Sequence Similarities
-

GO - Molecular Function
GO:0005524 : ATP binding
GO:0042626 : ATPase activity, coupled to transmembrane movement of substances

GO - Biological Process
-

GO - Cellular Component
GO:0016021 : integral component of membrane

Presumptive Null
Yes

UniProtKB Plutella xylostella
A0A0E3ZDK3

GenebankID or UniProtKB
KM245561

Molecular Type
Coding

Aberration Type
Deletion

Deletion Size
10-99 bp

Molecular Details of the Mutation
30bp deletion

Experimental Evidence
Linkage Mapping

Main Reference
Parallel evolution of Bacillus thuringiensis toxin resistance in lepidoptera. (2011)

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
3 (Chitin synthase 1 (CHS1), MAP4K4, para (kdr))
Related Haplotypes
No matches found.

COMMENTS