

## Biosafety Clearing-House (BCH)

GENETIC ELEMENT (GENE)

BCH-GENE-SCBD-14993-5

LAST UPDATED: 27 FEB 2014

### General information

Name of genetic element

Cry3Bb1

EN

Alternate genetic element name(s) (synonym(s))

CryIIIB2

EN

Abbreviation

CS-Cry3Bb1-BACTU

EN

Category

Protein coding sequence

Is this genetic element a synthetic molecule?

No

### Donor organism

Donor organism(s)

[BCH-ORGA-SCBD-45614-11](#) ORGANISM | BACILLUS THURINGIENSIS (BT, BACILLUS, BACTU) |  
Bacteria

Point of collection or acquisition of the donor organism(s)

Bacillus thuringiensis subsp. kumamotoensis; strain EG4691

EN

### Characteristics of the protein coding sequence

Name of the protein expressed by the coding sequence

Cry3Bb1 delta-endotoxin

EN

Biological function of the protein

The cry3Bb1 gene, isolated from the soil bacterium *Bacillus thuringiensis* (Bt) subspecies *kumamotoensis*, produces the insect control protein Cry3Bb1, a delta-endotoxin. The Cry3Bb1 protein provides protection against the western corn rootworm (*Diabrotica vigifera*) and northern corn rootworm (*Diabrotica barberi*).

EN

Related trait(s) or use(s) in biotechnology

Resistance to diseases and pests

Insects

Coleoptera (beetles)

### Additional Information

Cry proteins, of which Cry3Bb1 is only one, act by selectively binding to specific sites localized on the lining of the midgut of susceptible insect species. Following binding, pores are formed that disrupt midgut ion flow, causing gut paralysis and eventual death due to bacterial sepsis. Cry3Bb1 is lethal only when eaten by the larvae of coleopteran insects (i.e., beetles), and its specificity of action is directly attributable to the presence of specific binding sites in the target insects.

EN

Other relevant website addresses and/or attached documents

? [Characterization of two genes encoding \*Bacillus thuringiensis\* insecticidal crystal proteins toxic to \*Coleoptera\* species..pdf](#) ( *English* )

[BCH-GENE-SCBD-14993-5](#)

## Further Information

Questions about the Cartagena Protocol on Biosafety or the operation of the Biosafety Clearing-House may be directed to the Secretariat of the Convention on Biological Diversity.

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