

Biosafety Clearing-House (BCH)

GENETIC ELEMENT (GENE)

BCH-GENE-SCBD-115761-1

LAST UPDATED: 19 NOV 2020

General information

Name of genetic element

Cry14Ab1

EN

Abbreviation

Cry14Ab1

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

Characteristics of the protein coding sequence

Biological function of the protein

CRY14Ab1 is a crystal protein from *Bacillus thuringiensis* related to the other crystal proteins CRY1A, CRY3A and CRY4A. Structurally, the protein contains three domains. The protein has been demonstrated to have nematocidal activity against *Caenorhabditis elegans*, *Panagrellus redivivus*, *Nippostrongylus brasiliensis*, *Distolabrellus veechi*, *Meloidogyne spp.* (root knot nematodes), *Rotylenchulus reniformis* (reniform nematode), *Hopiolaimus spp.* (Lance nematode), *Pratylenchus spp.* and *Heterodera glycines* (soybean cyst nematode). The protein is thought to act in the intestine of nematodes. During feeding assays with *C. elegans*, the symptoms included constriction and thinning of intestinal cells, shrinkage of the gut, vacuolization and a degenerative appearance. Due to its relation to other crystal proteins, it is thought that CRY14A may also have insecticidal properties as well.

EN

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

Resistance to diseases and pests
Nematodes

Additional Information

Other relevant website addresses and/or attached documents

? [NCBI GenBank - AGU13817.1](#) (*English*)

? [Bacillus thuringiensis crystal proteins that taregt nematodes.pdf](#) (*English*)

? [WO2018119336A1 - Use of CRY14 for the control of nematode pests.pdf](#) (*English*)

BCH-GENE-SCBD-115761-1

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.

Secretariat of the Convention on Biological Diversity

413 rue Saint-Jacques, suite 800
Montreal, Québec, H2Y 1N9
Canada

Fax: +1 514 288-6588

Email: secretariat@cbd.int