

Biosafety Clearing-House (BCH)

LIVING MODIFIED ORGANISM (LMO)

BCH-LMO-SCBD-115912-2

[? Decisions on the LMO ? Risk Assessments](#)

LAST UPDATED: 23 FEB 2021

Living Modified Organism identity

The image below identifies the LMO through its unique identifier, trade name and a link to this page of the BCH. Click on it to download a larger image on your computer. For help on how to use it go to the LMO quick-links page.



Bt cauliflower

CBD

<https://bch.cbd.int/database/record?documentID=115912>



Read barcode or type above URL into internet browser to access information on this LMO in the Biosafety Clearing-House © SCBD 2012

Name

Bt cauliflower

EN

Transformation event

CFE-4

Developer(s)

- **ORGANIZATION:** MAHARASHTRA HYBRID SEEDS COMPANY LIMITED | [BCH-CON-SCBD-115887-1](#)

ORGANIZATION

Maharashtra Hybrid Seeds Company Limited
Private sector (business and industry)
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Description

The cauliflower (*Brassica oleracea*) was modified for resistance to Lepidoptera pests through the introduction and expression of *Bacillus thuringiensis* crystal protein, Cry1Ac. The protein forms pores in the midgut lining of susceptible pests, leading to cell lysis and septicemia.

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Additionally, the cauliflower contains an *Escherichia coli* neomycin phosphotransferase II cassette for kanamycin selection during transformation.

Recipient Organism or Parental Organisms

The term “Recipient organism” refers to an organism (either already modified or non-modified) that was subjected to genetic modification, whereas “Parental organisms” refers to those that were involved in cross breeding or cell fusion.

[BCH-ORGA-SCBD-115913-1](#) ORGANISM | BRASSICA OLERACEA VAR. BOTRYTIS - CAULIFLOWER, BROCCOFLOWER, CALABRESE, ROMANESCI BROCCOLI |

Point of collection or acquisition of the recipient organism or parental organisms

Brassica oleracea Botrytis group

EN

Characteristics of the modification process

Vector

pC2300ve10518

EN

Techniques used for the modification

Agrobacterium-mediated DNA transfer

Genetic elements construct

[T-35S-CaM](#)
0.000 kb

[CS-nptII-EC](#)
0.000 kb

[P-35S-CaMV](#)
0.000 kb

0.000 kb

[CS-cry1Ac-BA](#)
0.000 kb

[P-e35S-CaMV](#)
0.000 kb

Introduced or modified genetic element(s)

Some of these genetic elements may be present as fragments or truncated forms. Please see notes below, where applicable.

[BCH-GENE-SCBD-100287-7](#) CAMV 35S PROMOTER |

Promoter

[BCH-GENE-SCBD-15001-5](#) NEOMYCIN PHOSPHOTRANSFERASE II | (BACTERIA) |

Protein coding sequence | Resistance to antibiotics (Kanamycin)

[BCH-GENE-SCBD-100290-6](#) CAMV 35S TERMINATOR |

Terminator

[BCH-GENE-SCBD-14986-6](#) CRY1AC | BACILLUS THURINGIENSIS - BT, BACILLUS, BACTU |

Protein coding sequence | Resistance to diseases and pests (Insects, Lepidoptera (butterflies and moths))

[BCH-GENE-SCBD-100366-6](#) CAMV ENHANCED 35S PROMOTER |

Promoter

Notes regarding the genetic elements present in this LMO

The modified cauliflower contains two gene cassettes: *Escherichia coli* neomycin phosphotransferase II (*nptII*) and *Bacillus thuringiensis* *cry1Ac*.

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Transcription of *nptII* commences from a *Cauliflower mosaic virus* (CaMV) 35S promoter and terminates at a CaMV 35S terminator. Due to the viral promoters, transcription of *nptII* is expected to occur at elevated levels in all plant tissues.

Transcription of *cry1Ac* is controlled by a CaMV enhanced 35S promoter. Transcription is expected to occur at very high levels in all tissues due to the enhanced nature (duplicated enhancer) of the viral promoter.

LMO characteristics

Modified traits

Resistance to diseases and pests
Insects
Lepidoptera (butterflies and moths)
Resistance to antibiotics
Kanamycin

Common use(s) of the LMO

Food

Detection method(s)

Additional Information

See provision patent attached in the 'Additional Information' section below.

EN

Additional Information

Other relevant website addresses and/or attached documents

- ? [Insect resistant transgenic cauliflower plant comprising CFE-4 and methods of detection thereof.pdf](#) (English)
- ? [Bt Cauliflower construct.pdf](#) (English)

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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

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