

Biosafety Clearing-House (BCH)

LIVING MODIFIED ORGANISM (LMO)


BCH-LMO-SCBD-101018-13

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

LAST UPDATED: 12 FEB 2014

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.



BCS-GH004-7
Herbicide-tolerant, insect-resistant cotton

CBD

<https://bch.cbd.int/database/record?documentID=101018>



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

Name

Herbicide-tolerant, insect-resistant cotton

EN

Transformation event

T304-40

Unique identifier

BCS-GH004-7

Developer(s)

- [ORGANIZATION: BAYER CROP SCIENCE K.K](#) | [BCH-CON-JP-11695-3](#)

ORGANIZATION

Bayer Crop Science K.K
Marunouchi Kitaguchi Building, 1-6-5, Marunouchi
Chiyoda-ku, Tokyo
Japan
Website:

Description

LM cotton line, T304-40, is protected against feeding damage by Lepidopteran insect larvae, and is also tolerant to herbicides containing glufosinate ammonium. Insect protection is conferred by expression of a modified Cry1Ab protein from *Bacillus thuringiensis* and herbicide tolerance is conferred by expression of phosphinothricin acetyltransferase (PAT) from *Streptomyces hygroscopicus*.

EN

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-12080-6 ORGANISM | GOSSYPIMUM HIRSUTUM (COTTON) |

Crops

Characteristics of the modification process

Vector

pTDL008 derived from pGSV20

EN

Techniques used for the modification

Agrobacterium-mediated DNA transfer

Genetic elements construct

V-RB-RHIRD
0.000 kb

T-3UTR_NADPME1-FLAF
0.940 kb

CS-Cry1Ab-BA
1.850 kb

L-5_e1-OF
0.060 kb

P-Ps7s7
1.040 kb

P-35S-CaMV
0.860 kb

CS-bar-STRHY
0.550 kb

T-nos-RHIRD
0.310 kb

V-LB-RHIRD
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-14972-12 PHOSPHINOTHRICIN N-ACETYLTRANSFERASE GENE |

Protein coding sequence | Resistance to herbicides (Glufosinate)

BCH-GENE-SCBD-14985-12 CRY1AB | BACILLUS THURINGIENSIS - BT, BACILLUS, BACTU |

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

BCH-GENE-SCBD-101021-3 PS7S7 |

Promoter

BCH-GENE-SCBD-101025-5 NADP-MALIC ENZYME 1 GENE 3'UTR AND TERMINATOR | (COASTALPLAIN YELLOWTOPS) |

Terminator

BCH-GENE-SCBD-100287-7 CAMV 35S PROMOTER |

Promoter

BCH-GENE-SCBD-100269-8 NOPALINE SYNTHASE GENE TERMINATOR |

Terminator

BCH-GENE-SCBD-101416-6 TI PLASMID RIGHT BORDER REPEAT |

Plasmid vector

BCH-GENE-SCBD-101415-9 TI PLASMID LEFT BORDER REPEAT |

Plasmid vector

BCH-GENE-SCBD-104947-3 5'E1 LEADER | (RICE) |

Leader

Notes regarding the genetic elements present in this LMO

The modified cry1Ab gene1 has been derived from a gene (Genbank accession No. X04698 - first cloned and characterised by Höfte et al (1986)) which, under the latest nomenclature system, is now known as cry1Ab5 (Bacillus thuringiensis toxin nomenclature, database available online at http://www.lifesci.sussex.ac.uk/home/Neil_Crickmore/Bt/toxins2.html).

Sequencing of the 9056 bp inserted transgenic construct and Southern blot analysis revealed an almost full copy of the T-DNA construct (with an incomplete 3' me1 terminator) was inserted into the T304-40 LM cotton line in addition to:

- a partial 3' me1 terminator;
- a partial copy of the cry1Ab gene cassette, with a truncated Ps7s7 promoter, in a tail-to-tail orientation, and
- a partial copy of the bar gene cassette in which the nos terminator is truncated.

As a result of the transformation event, four new junctions have been created (see Figure 4 in the attached file below), two being located at the 5' and 3' ends of the insert and two being located within the insert as a result of the rearrangement. Southern blot analysis revealed no vector backbone sequences in cotton line T304-40.

For further description of the T304-40 LM cotton, see the safety assessment document attached below.

EN

LMO characteristics

Modified traits

Resistance to diseases and pests

Insects

Lepidoptera (butterflies and moths)

European corn borer (*Ostrinia nubilalis*)

Resistance to herbicides

Glufosinate

Common use(s) of the LMO

Food

Feed

Fiber/textile

Other (Industrial)

Detection method(s)

External link(s)

? [BCS-GH004-7 - EU Reference Laboratory for GM Food and Feed \(English \)](#)

Additional Information

Other relevant website addresses and/or attached documents

- ? [T304-40 Safety Assessment - Food Standards Australia and New Zealand \(English \)](#)
- ? [120105-01 Import and processing of cotton T304-40.pdf \(English \)](#)

[BCH-LMO-SCBD-101018-13](#)

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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