

Biosafety Clearing-House (BCH)

LIVING MODIFIED ORGANISM (LMO)


BCH-LMO-SCBD-14750-19

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

LAST UPDATED: 24 MAY 2013

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.



MON-00810-6
YieldGard™ maize

CBD

<https://bch.cbd.int/database/record?documentID=14750>



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

Name

YieldGard™ maize

EN

Transformation event

MON810

Unique identifier

MON-00810-6

Developer(s)

- [ORGANIZATION: MONSANTO](#) | [BCH-CON-SCBD-14925-3](#)

ORGANIZATION

Monsanto
800 North Lindbergh Blvd.
St. Louis, MO
63167, United States of America
Phone: + 1 314 694-1000
Fax: +1 314 694-3080
Website: <http://www.monsanto.com>

Description

Insect-resistant maize produced by inserting the cry1Ab gene from *Bacillus thuringiensis* subsp. *kurstaki* HD-1. The genetic modification affords resistance to attack by the European corn borer (ECB), *Ostrinia nubilalis*.

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-246-6](#) ORGANISM | ZEA MAYS (MAIZE, CORN, MAIZE) |

Crops

Related LMO(s)

[BCH-LMO-SCBD-14779-7](#) | PH-MON809-2 - Insect-resistant maize MON809 | Resistance to antibiotics - Kanamycin Resistance to diseases and pests - Insects - Lepidoptera (butterflies and moths)

Resistance to herbicides - Glyphosate

[BCH-LMO-SCBD-15410-7](#) | Insect Resistant Maize MON801 | Resistance to antibiotics - Kanamycin

Resistance to diseases and pests - Insects - Lepidoptera (butterflies and moths) Resistance to

herbicides - Glyphosate

Characteristics of the modification process

Vector

PV-ZMBK07 and PV-ZMGT10

EN

Techniques used for the modification

Biolistic / Particle gun

Genetic elements construct

P-e35S-CaMV
0.610 kb

I-hsp70-MAIZE
0.800 kb

CS-Cry1Ab-BACTU
3.460 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-14985-12](#) CRY1AB | BACILLUS THURINGIENSIS - BT, BACILLUS, BACTU |

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

[BCH-GENE-SCBD-100359-7](#) HSP70 INTRON | (MAIZE, CORN) |

Intron

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

Promoter

Notes regarding the genetic elements present in this LMO

The transgenic maize line MON810 was genetically engineered to resist ECB by producing its own insecticide. This line was developed by introducing a synthetic version of the *cry1Ab* gene, isolated from the soil bacterium *Bacillus thuringiensis* (Bt) which was modified to enhance the expression of the Cry1Ab protein in plants, however the resulting amino acid sequence is identical to the native protein.

Molecular studies demonstrated that a single truncated copy of the *cry1Ab* coding sequence was integrated into the corn genome along with the enhanced cauliflower mosaic virus 35S

EN

promoter (P-e35S), and the hsp 70 intron (I-Hsp70). The *nos* terminator was not integrated into MON810 due to a truncation of the 3' end of the gene cassette. Western analysis confirmed that a truncated Cry1Ab protein of approximately 91 kD (native Cry1Ab had a molecular weight of approximately 131 kD) was inserted into the genome.

Corn event MON 810 was produced by microprojectile bombardment of embryogenic corn tissue with plasmids PVZMBK07 and PV-ZMGT10. However plasmid vector PV-ZMGT10 was not integrated into the plant genome. Further Southern blot analysis indicated that the genes for glyphosate tolerance (CP4 EPSPS) and antibiotic resistance (*neo*) were not transferred to line MON 810 and the absence of the CP4 EPSPS and *gox* gene products was also confirmed by Western blotting. The CP4 EPSPS and GOX protein encoding genes were presumed to have been inserted into the initial transformant at a separate genetic loci from the *cry1Ab* gene and then subsequently lost through segregation during the crossing events leading to line MON810.

Southern analysis confirms that the *nptII* gene (originally present in PVZMBK07 and PV-ZMGT10) is not present in MON 810.

LMO characteristics

Modified traits

Resistance to diseases and pests

Insects

Lepidoptera (butterflies and moths)

European corn borer (*Ostrinia nubilalis*)

Common use(s) of the LMO

Food

Feed

Biofuel

Detection method(s)

External link(s)

? [MON-ØØ81Ø-6 - EU Reference Laboratory for GM Food and Feed \(EURL-GMFF\)](#) (*English*)

? [MON-ØØ81Ø-6 - CropLife International Detection Methods Database](#) (*English*)

Additional Information

Other relevant website addresses and/or attached documents

? [MON810 - OECD Biotrack Product Database](#) (*English*)

? [MON810 - CERA GM Database](#) (*English*)

? [Safety Assessment of YieldGard Insect-Protected Corn Event MON 810](#) (*English*)

? [BATS \(2003\) Genetically Modified \(GM\) Crops: molecular and regulatory details, v.2.pdf](#) (*English*)

? [MON810 - Monsanto.pdf](#) (*English*)

[BCH-LMO-SCBD-14750-19](#)

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