LIVING MODIFIED ORGANISM (LMO)

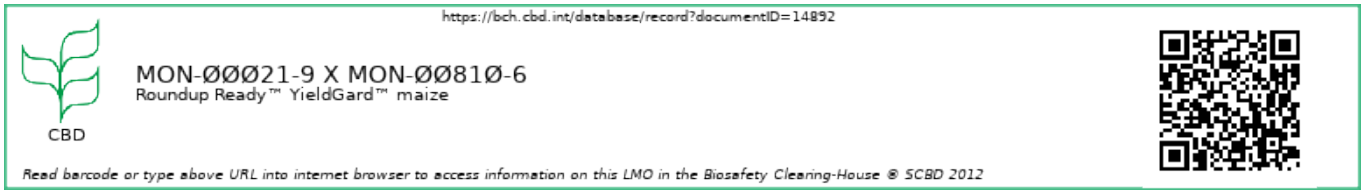
BCH-LMO-SCBD-14892-10

? Decisions on the LMO ? Risk Assessments

LAST UPDATED: 20 FEB 2018

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.



Name

Roundup Ready™ YieldGard™ maize | EN

Transformation event

GA21 x MON810

Unique identifier

MON-ØØØ21-9 x MON-ØØ81Ø-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

This LMO is a stacked insect-resistant and glyphosate-tolerant maize derived from conventional cross-breeding of MON-ØØØ21-9 and MON-ØØ81Ø-6. | 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

BCH-LMO-SCBD-14750-19 LIVING MODIFIED ORGANISM | MON-ØØ81Ø-6 - YIELDGARD™ MAIZE

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

BCH-LMO-SCBD-14794-18 LIVING MODIFIED ORGANISM | MON-ØØØ21-9 - ROUNDUP READY™ MAIZE

Resistance to herbicides - Glyphosate

Characteristics of the modification process

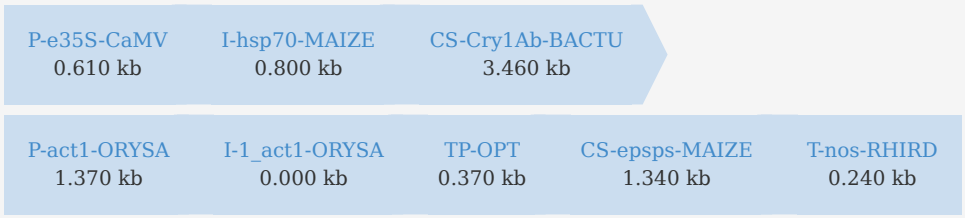
Vector

pDPG434, PV-ZMBK07 and PV-ZMGT10 EN

Techniques used for the modification

Cross breeding

Genetic elements construct



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-14975-5 BETA-LACTAMASE GENE | (BACTERIA)

Protein coding sequence | Resistance to antibiotics (Ampicillin)

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-100364-5 RICE ACTIN 1 GENE PROMOTER | (RICE)

Promoter

BCH-GENE-SCBD-100355-6 RICE ACTIN 1, INTRON | (RICE)

Intron

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

Terminator

BCH-GENE-SCBD-100366-6 CAMV ENHANCED 35S PROMOTER

Promoter

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

Intron

BCH-GENE-SCBD-101419-4 OPTIMIZED TRANSIT PEPTIDE

Transit signal

BCH-GENE-SCBD-46333-8 5-ENOLPYRUVYLSHIKIMATE-3-PHOSPHATE SYNTHASE | (MAIZE, CORN)

Protein coding sequence | Resistance to herbicides (Glyphosate)

Notes regarding the genetic elements present in this LMO

DNA insert from GA21, vector pDPG434: The GA21 line of maize was genetically engineered, by particle acceleration (biolistic) transformation, to be tolerant of glyphosate-containing herbicides. **DNA insert from MON810, vectors PV-ZMBK07 and PV-ZMGT10:** MON810 contains a truncated portion of a synthetic form of the cry1Ab gene. Two constructs PV-ZMBK07 and PV-ZMGT10 have been used for transformation, but molecular analyses showed that MON810 does not contain any element from PV-ZMGT10 construct and only the elements from construct PV-ZMBK07 have been integrated into its genome. For additional information on this LMO, please refer to the records of the parental LMOs.	EN

LMO characteristics

Modified traits

Resistance to diseases and pests
- Insects
  - Lepidoptera (butterflies and moths)
    - European corn borer (Ostrinia nubilalis)

Resistance to herbicides
- Glyphosate

Resistance to antibiotics
- Ampicillin

Common use(s) of the LMO

Food
Feed
Biofuel

Detection method(s)

External link(s)

? MON-ØØØ21-9 - EU Reference Laboratory for GM Food and Feed (EURL-GMFF) *(English)*

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

Additional Information

GA21 contains a single single insertion site with 3 complete copies of mEPSPS cassette plus 3 incomplete copies as follows: (1) a mEPSPS gene cassette, truncated at the 5' end of the rice actin promoter sequence; (2) three complete internal mEPSPS gene cassettes; (3) a partial mEPSPS gene cassette containing the promoter, intron, otp, and a partial mEPSPS coding	EN

sequence terminating in a stop codon; and (4) an additional partial gene cassette at the 3' end containing only the rice actin promoter and 5' mRNA leader sequence, but truncating before the start of the rice actin intron, followed by corn genomic DNA.

MON810 contains one integrated DNA consisting of P-e35S, I-Hsp70 and cry1Ab. The terminator of the nopaline synthase (nos) gene was lost due to a truncation at the 3' end of the gene cassette during genome integration and is, therefore, not present in MON810.

Additional Information

Other relevant website addresses and/or attached documents

? OECD UID Database: MON-ØØØ21-9 x MON-ØØ81Ø-6 *(English)*

GA21 X MON810 - CERA GM database *(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.

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