

Biosafety Clearing-House (BCH)

LIVING MODIFIED ORGANISM (LMO)

BCH-LMO-SCBD-105689-1

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

LAST UPDATED: 23 JUL 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.



<https://bch.cbd.int/database/record?documentID=105689>
DAS-Ø15Ø7-1 X MON-ØØ81Ø-6 X SYN-IR162-4 X MON-ØØ6Ø3-6
 Herbicide tolerant, insect resistant corn



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 corn

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Transformation event

TC1507 x MON810 x MIR162 x NK603

Unique identifier

DAS-Ø15Ø7-1 x MON-ØØ81Ø-6 x SYN-IR162-4 x MON-ØØ6Ø3-6

Developer(s)

- **ORGANIZATION:** PIONEER HI-BRED INTERNATIONAL INC. | [BCH-CON-SCBD-14931-2](#)

ORGANIZATION

Pioneer Hi-Bred International Inc.
 Private sector (business and industry)
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 50131, United States of America
 Phone: +1 515 535-3200
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Description

A stacked maize line DAS-Ø15Ø7-1 x MON-ØØ81Ø-6 x SYN-IR162-4 x MON-ØØ6Ø3-6 obtained through conventional breeding of each of the parental organisms. The modifications in these lines confer tolerance to the glyphosate and glufosinate herbicides and resistance to Lepidoptera and European Corn Borer pests.

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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-14776-17 LIVING MODIFIED ORGANISM | MON-ØØ6Ø3-6 - ROUNDUP READY™ MAIZE |

Resistance to herbicides - Glyphosate

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-14841-13 LIVING MODIFIED ORGANISM | DAS-Ø15Ø7-1 - HERCULEX™ I MAIZE |

Resistance to diseases and pests (Insects, Lepidoptera (butterflies and moths)), Resistance to herbicides (Glufosinate)

BCH-LMO-SCBD-100885-13 LIVING MODIFIED ORGANISM | SYN-IR162-4 - AGRISURE™ VIPTERA MAIZE |

Syngenta Crop Protection AG | Resistance to diseases and pests (Insects, Lepidoptera (butterflies and moths))

Characteristics of the modification process

Vector

pNOV1300, PV-ZMGT32, PV-ZMBK07, PV-ZMGT10 and PHI8999A

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Techniques used for the modification

Cross breeding

Genetic elements construct

P-act1-ORYSA 0.800 kb	I-1_act1-ORYSA 0.600 kb	TP-ctp2-ARATH 0.200 kb	CS-CP4epsps-RHIRD 1.400 kb	T-nos-RHIRD 0.300 kb
P-e35S-CaMV 0.600 kb	I-hsp70-MAIZE 0.800 kb	TP-ctp2-ARATH 0.200 kb	CS-CP4epsps-RHIRD 1.400 kb	T-nos-RHIRD 0.300 kb
P-e35S-CaMV 0.610 kb	I-hsp70-MAIZE 0.800 kb	CS-Cry1Ab-BACTU 3.460 kb		
P-ubi1-MAIZE 1.980 kb	CS-cry1F-BACTU 1.860 kb	T-orf25-RHIRD 0.720 kb		
P-35S-CaMV 0.550 kb	CS-pat-STRVR 0.550 kb	T-35S-CaMV 0.200 kb		
P-ubi1-MAIZE 1.990 kb	CS-vip3Aa20-BACTU 2.370 kb	I-9_pepc-MAIZE 0.110 kb	T-35S-CaMV 0.070 kb	
P-ubi1-MAIZE 1.990 kb	CS-pmi-ECOLX 1.180 kb	T-nos-RHIRD 0.250 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-100364-5 RICE ACTIN 1 GENE PROMOTER | (RICE) |

Promoter

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

Intron

BCH-GENE-SCBD-100365-6 CHLOROPLAST TRANSIT PEPTIDE 2 | (THALE CRESS) |

Transit signal

BCH-GENE-SCBD-14979-7 5-ENOLPYRUVYLSHIKIMATE-3-PHOSPHATE SYNTHASE GENE |

Protein coding sequence | Resistance to herbicides (Glyphosate)

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-14985-12 CRY1AB | BACILLUS THURINGIENSIS - BT, BACILLUS, BACTU |

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

BCH-GENE-SCBD-100362-7 UBIQUITIN GENE PROMOTER | (MAIZE, CORN) |

Promoter

BCH-GENE-SCBD-14987-8 CRY1F | BACILLUS THURINGIENSIS - BT, BACILLUS, BACTU |

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

BCH-GENE-SCBD-100363-5 ORF25 POLYA TERMINATOR SEQUENCE |

Terminator

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

Promoter

BCH-GENE-SCBD-15002-4 PHOSPHINOTHRICIN N-ACETYLTRANSFERASE GENE |

Protein coding sequence | Resistance to herbicides (Glufosinate)

BCH-GENE-SCBD-100290-6 CAMV 35S TERMINATOR |

Terminator

BCH-GENE-SCBD-100887-5 VEGETATIVE INSECTICIDAL PROTEIN 3AA20 |

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

BCH-GENE-SCBD-101406-4 PHOSPHOENOLPYRUVATE CARBOXYLASE, INTRON 9 | (MAIZE, CORN) |

Intron

BCH-GENE-SCBD-15003-7 PHOSPHOMANNOSE ISOMERASE GENE | (BACTERIA) |

Protein coding sequence | Mannose tolerance, Selectable marker genes and reporter genes

Notes regarding the genetic elements present in this LMO

DNA insert from MON810 vector PV-ZMBK07 and PV-ZMGT10:

The cry1Ab gene, isolated from the common soil bacterium *Bacillus thuringiensis* (Bt), produces the insect control protein Cry1Ab, a delta-endotoxin.

DNA insert from NK603 vector PV-ZMGT32:

59122 x NK603 also contains a form of the plant enzyme 5-enolpyruvylshikimate-3-phosphate synthase (EPSPS) that allows the plant to survive the

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otherwise lethal application of glyphosate. The glyphosate-tolerant EPSPS gene was isolated from the CP4 strain of the common soil bacterium *Agrobacterium tumefaciens*.

DNA insert from TC1507 vector PHI8999A:

Vector contains the cry1F gene from *Bacillus thuringiensis* to confer resistance to the European corn borer. The vector additionally contains the pat gene to confer tolerance to the glufosinate ammonium herbicide.

DNA insert from MIR162 vector pNOV1300:

MIR162 maize is transformed with vip3Aa20 gene which encodes the Vip3Aa20 protein that confers resistance against lepidopteran insect pests. Event MIR162 maize also contains the manA gene from *Escherichia coli*, which encodes the selectable marker, phosphomannose isomerase (PMI).

For additional information on this LMO, please refer to the records of the parental LMOs.

LMO characteristics

Modified traits

Resistance to diseases and pests
Insects
Lepidoptera (butterflies and moths)
Resistance to herbicides
Glufosinate
Glyphosate

Common use(s) of the LMO

Food
Feed

Detection method(s)

External link(s)

- ? [Event-specific Method for the Quantification of Maize MIR162 Using Real-time PCR.pdf](#) (English)
- ? [DAS-01507-1 - EU Reference Laboratory for GM Food and Feed \(EURL-GMFF\)](#) (English)
- ? [MON-00810-6 - EU Reference Laboratory for GM Food and Feed \(EURL-GMFF\)](#) (English)
- ? [MON-00603-6 - EU Reference Laboratory for GM Food and Feed \(EURL-GMFF\)](#) (English)

Additional Information

Other relevant website addresses and/or attached documents

- ? [DAS-Ø15Ø7-1 x MON-ØØ81Ø-6 x SYN-IR162-4 x MON-ØØ6Ø3-6 - ISAAA](#) (English)

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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