

Biosafety Clearing-House (BCH)

LIVING MODIFIED ORGANISM (LMO)

BCH-LMO-SCBD-15178-8

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

LAST UPDATED: 24 JUL 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.



CBD

<https://bch.cbd.int/database/record?documentID=15178>

DAS-59122-7 X MON-ØØ6Ø3-6
Herculex™ RW Rootworm Protection Roundup Ready™ 2 maize



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

Name

Herculex™ RW Rootworm Protection Roundup Ready™ 2 maize

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Transformation event

59122 x NK603

Unique identifier

DAS-59122-7 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)
7100 NW 62nd Avenue PO Box 1000
Johnston, Iowa
50131, United States of America
Phone: +1 515 535-3200
Website: www.pioneer.com/

Description

The stacked maize line 59122 x NK603 was produced by cross breeding between maize LMOs 59122 and NK603 to resist the Coleopteran pests (western corn rootworm, northern corn rootworm and Mexican corn rootworm) and for tolerance to herbicides containing glufosinate and glyphosate.

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59122 x NK603 inherited the cry34Ab1, cry35Ab1 and pat genes from the 59122 parent, and two copies of the epsps gene from NK603

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-15165-13 LIVING MODIFIED ORGANISM | DAS-59122-7 - HERCULEX™ RW ROOTWORM PROTECTION MAIZE |

Pioneer Hi-Bred International Inc. | Resistance to diseases and pests (Insects, Coleoptera (beetles)), Resistance to herbicides (Glufosinate)

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

Resistance to herbicides - Glyphosate

Characteristics of the modification process

Vector

PV-ZMGT32 and PHP17662

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Techniques used for the modification

Cross breeding

Genetic elements construct

P-ubi1-MAIZE
0.000 kb

CS-cry34Ab1-BACTU
0.000 kb

T-pinII-SOLTU
0.000 kb

P-pox-WHEAT
0.000 kb

CS-cry35Ab1-BACTU
0.000 kb

T-pinII-SOLTU
0.000 kb

P-35S-CaMV
0.000 kb

CS-pat-STRVR
0.000 kb

T-35S-CaMV
0.000 kb

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

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-14994-9 CRY34AB1 | BACILLUS THURINGIENSIS - BT, BACILLUS, BACTU |

Protein coding sequence | Resistance to diseases and pests (Insects, Coleoptera (beetles))

BCH-GENE-SCBD-14995-8 CRY35AB1 | BACILLUS THURINGIENSIS - BT, BACILLUS, BACTU |

Protein coding sequence | Resistance to diseases and pests (Insects, Coleoptera (beetles))

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

Protein coding sequence | Resistance to herbicides (Glufosinate)

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

Protein coding sequence | Resistance to herbicides (Glyphosate)

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

Promoter

BCH-GENE-SCBD-100367-4 PROTEINASE INHIBITOR II GENE TERMINATOR | (POTATO) |

Terminator

BCH-GENE-SCBD-100368-6 PEROXIDASE GENE PROMOTER | (WHEAT) |

Promoter

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

Promoter

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

Terminator

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

Transit signal

Notes regarding the genetic elements present in this LMO

DNA insert from 59122 vector PHP17662:

The cry34Ab1 and cry35Ab1 genes, isolated from the common soil bacterium *Bacillus thuringiensis* (Bt) strain PS149B1, produce the insect control proteins (delta-endotoxins) Cry34Ab1 and Cry35Ab1.

The pat gene was isolated from the soil bacterium *Streptomyces viridochromogenes* and confers tolerance to herbicides containing glufosinate ammonium.

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

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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

Coleoptera (beetles)

Resistance to herbicides

Glufosinate

Glyphosate

Common use(s) of the LMO

Food

Feed

Biofuel

Detection method(s)

External link(s)

? [DAS-59122-7 - EU Reference Laboratory for GM Food and Feed \(EURL-GMFF\)](#) (*English*)

? [MON-ØØ6Ø3-6 - EU Reference Laboratory for GM Food and Feed \(EURL-GMFF\)](#) (*English*)

Additional Information

Other relevant website addresses and/or attached documents

? [DAS-59122-7 x NK603 - OECD Biotrack Product Database](#) (*English*)

[DAS-59122-7 x NK603 - CERA Database](#) (*English*)

[BCH-LMO-SCBD-15178-8](#)

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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