

Biosafety Clearing-House (BCH)

LIVING MODIFIED ORGANISM (LMO)


BCH-LMO-SCBD-48466-7

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

LAST UPDATED: 20 MAR 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.



DP-Ø9814Ø-6
Optimum™ GAT™ maize

CBD

<https://bch.cbd.int/database/record?documentID=48466>



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

Name

Optimum™ GAT™ maize

EN

Transformation event

98140

Unique identifier

DP-Ø9814Ø-6

Developer(s)

- **ORGANIZATION:** PIONEER HI-BRED NORTHERN EUROPE SALES DIVISION GMBH | [BCH-CON-DE-48465-1](#)

ORGANIZATION

Pioneer Hi-Bred Northern Europe Sales Division GmbH

Apensener Str. 198

Buxtehude, Niedersachsen

21604, Germany

Website: <http://public.pioneer.com/portal/site/Public/>, <http://www.pioneer.com/web/site/portal/>

Description

The 98140 maize has been genetically modified (GM) to express the GAT4621 and ZM-HRA proteins. The GAT4621 protein is a glyphosate acetyltransferase (GAT), encoded by an optimized form of the gat gene from Bacillus licheniformis. When cultivated, expression of the GAT4621 protein in 98140 maize confers tolerance to the herbicide glyphosate. The ZM-HRA protein is an acetolactate synthase (ALS) encoded by the zm-hra gene, an optimized

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form of the endogenous als gene from Zea mays. When cultivated, expression of the ZM-HRA protein in 98140 maize confers tolerance to ALS-inhibiting herbicides, such as chlorimuron and thifensulfuron.

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

Characteristics of the modification process

Vector

PHP24279 EN

Techniques used for the modification

Agrobacterium-mediated DNA transfer

Genetic elements construct

T-pinII-SOLT' 0.311 kb	CS-ahas-M 1.917 k.	P-ahas-MAIZE 0.661 kb		
P-ubi1-MAIZE 0.900 kb	L-ubi-MAIZE 0.083 kb	I-1_ubi1-MAIZE 1.009 kb	CS-gat-BACLI 0.440 kb	T-pinII-SOLTU 0.316 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-48363-4 GLYPHOSATE-N-ACTEYLTRANSFERASE GENE |
Protein coding sequence | Resistance to herbicides (Glyphosate)

BCH-GENE-SCBD-48364-5 ACETOHYDROXYACID SYNTHASE GENE | (MAIZE, CORN) |
Protein coding sequence | Resistance to herbicides (Sulfonylurea)

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

BCH-GENE-SCBD-103926-4 ACETOHYDROXYACID SYNTHASE GENE PROMOTER | (MAIZE, CORN) |
Promoter

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

BCH-GENE-SCBD-103927-2 UBIQUITIN 5' UNTRANSLATED REGION | (MAIZE, CORN) |
Leader

BCH-GENE-SCBD-103627-5 UBIQUITIN INTRON 1 | (MAIZE, CORN) |
Intron

Notes regarding the genetic elements present in this LMO

For transformation of 98140 maize, binary vector PHP24279 was used. The between the left and right border repeats, the inserted T-DNA consists of a 7440 bp sequence contains, in addition to the genetic elements listed above:

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Three copies of the CaMV 35S enhancer region from cauliflower mosaic virus between the promoters of the two expression cassettes which contribute to enhance expression of both the *gat4621* and *zm-hra* genes.

LMO characteristics

Modified traits

Resistance to herbicides
Glyphosate
Sulfonylurea

Common use(s) of the LMO

Food
Feed

Detection method(s)

Additional Information

The results of the molecular characterization described in this application support the conclusion that 98140 maize contains a single and full-length copy of the T-DNA region from binary vector PHP24279.

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Additional Information

Additional Information

Authorisation of import and processing of DP-Ø98140-6 in the EU has been applied for.

Other relevant website addresses and/or attached documents

- ? [Summary Notification Information Format DP-098140-6 \(English \)](#)
- ? [CERA GM Database \(English \)](#)
- ? [Optimum GAT maize - APHIS.pdf \(English \)](#)

BCH-LMO-SCBD-48466-7

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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