

## Biosafety Clearing-House (BCH)

LIVING MODIFIED ORGANISM (LMO)


BCH-LMO-SCBD-104758-3

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

LAST UPDATED: 13 NOV 2017

### 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-87427-7**  
Maize modified for tissue selective glyphosate tolerance

CBD

<https://bch.cbd.int/database/record?documentID=104758>



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

Name

Maize modified for tissue selective glyphosate tolerance

EN

Transformation event

MON87427

Unique identifier

MON-87427-7

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

MON87427 was modifies to express the CP4 EPSPS protein which confers tolerance to the herbicide glyphosate.

EN

The e35S-hsp70 promoter and intron combination is used to drive the tissue selective

expression of the cp4 epsps gene resulting in CP4 EPSPS protein production in vegetative and female reproductive tissue, providing tolerance to glyphosate within these tissues. This specific promoter and intron combination also results in limited or no production of CP4 EPSPS protein in two key male reproductive tissues: pollen microspores which develop into pollen grains, and tapetum cells that supply nutrients to the pollen.

Thus, in MON 87427, male reproductive tissues critical for male gametophyte development are not tolerant to glyphosate. This allows glyphosate-treated MON 87427 containing inbred lines to serve as a female parent in the production of hybrid seed.

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

Point of collection or acquisition of the recipient organism or parental organisms

Cultivar: LH198 × Hill EN

Characteristics of the modification process

Vector

PV-ZMAP1043 EN

Techniques used for the modification

Agrobacterium-mediated DNA transfer

Genetic elements construct

<a href="#">P-e35S-CaMV</a> 0.620 kb	<a href="#">I-hsp70-MAIZE</a> 0.803 kb	<a href="#">TP-ctp2-ARATH</a> 0.227 kb	<a href="#">CS-CP4epsps-RHIRD</a> 1.367 kb	<a href="#">T-nos-RHIRD</a> 0.252 kb
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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-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

[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 |

<p>The cp4 epsps coding sequence is the codon optimized coding sequence of the aroA gene from <i>Agrobacterium</i> sp. strain CP4 encoding CP4 EPSPS.</p>	
<p>Southern blot analyses indicate that a single copy of the T-DNA was inserted at a single site in the maize genome and no plasmid vector backbone sequences were detected to have been integrated. DNA sequencing analyses indicated that the expected T-DNA sequences were integrated.</p>	EN

Resistance to herbicides  
Glyphosate

Food  
Feed

? MON-87427-7 - EU Reference Laboratory for GM Food and Feed (EURL-GMFF) ( *English* )

- ? [MON 87427 - FDA](#) ( *English* )
- ? [MON 87427 - Monsanto.pdf](#) ( *English* )
- ? [MON 87427 - CFIA](#) ( *English* )
- ? [MON-87427-7 - OECD](#) ( *English* )

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