LIVING MODIFIED ORGANISM (LMO)

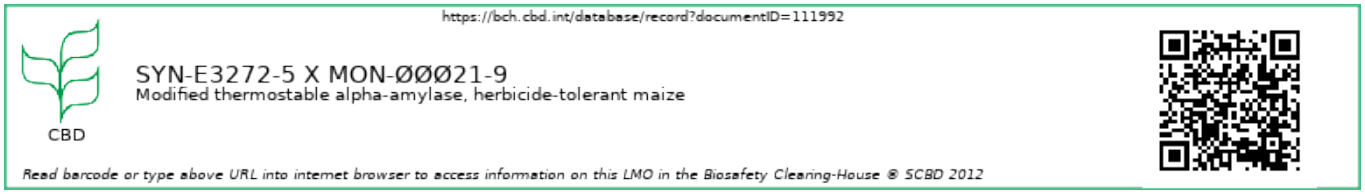
BCH-LMO-SCBD-111992-2

? 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

Modified thermostable alpha-amylase, herbicide-tolerant maize | EN

Transformation event

3272 x GA21

Unique identifier

SYN-E3272-5 x MON-ØØØ21-9

Developer(s)

- ORGANIZATION: SYNGENTA SEEDS GMBH | BCH-CON-SCBD-101875-3

ORGANIZATION

Syngenta Seeds GmbH
Private sector (business and industry)
Syngenta Seeds GmbH Zum Knipkenbach 20
Bad Salzuflen
32107, Germany
Phone: +49 52 22 5308-0
Fax: +49 52 22 5308-12
Email: info.seeds@syngenta.com
Website: http://www.syngenta-seeds.de/de/

Description

The stacked maize line SYN-E3272-5 and MON-ØØØ21-9 was obtained through the traditional cross breading of each of the parental organisms to produce a maize that expresses each of | EN

amy797E alpha amylase, PMI, and EPSPS genes. The expression of these genes are expected to confer tolerance to glyphosate herbicide as well as the synthesis of thermostable alpha-amylase.

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-15109-9 LIVING MODIFIED ORGANISM | SYN-E3272-5 - ENOGEN™ MAIZE

Mannose tolerance Selectable marker genes and reporter genes Thermostable alpha-amylase Use in industrial applications - Biofuel production

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

Resistance to herbicides - Glyphosate

Characteristics of the modification process

Vector

pNOV7013 and pDPG434 EN

Techniques used for the modification

Cross breeding

Genetic elements construct

P-gz27-MAIZE 0.680 kb	CS-amy797E 1.380 kb	TP-SEKDEL 0.010 kb	I-9_pepc-MAIZE 0.110 kb	T-35S-CaMV 0.070 kb
P-ubi1-MAIZE 1.990 kb	I-1_ubi1-MAIZE 0.000 kb	CS-pmi-ECOLX 1.180 kb	T-nos-RHIRD 0.250 kb	
P-act1-ORYSA 1.370 kb	I-1_act1-ORYSA 0.000 kb	TP-OPT 0.370 kb	CS-epsps-MAIZE 1.340 kb	T-nos-RHIRD 0.240 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-103622-5 27KD GAMMA-ZEIN PROMOTER | (MAIZE, CORN)

Promoter

BCH-GENE-SCBD-14966-7 AMY797E ALPHA AMYLASE | THERMOCOCCALES SPP. - THERMOCOCCUS

Protein coding sequence | Thermostable alpha-amylase,Use in industrial applications (Biofuel production)

BCH-GENE-SCBD-102033-4 SEKDEL ER RETENTION SIGNAL

Transit signal

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

Intron

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

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

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

BCH-GENE-SCBD-15003-7 PHOSPHOMANNOSE ISOMERASE GENE | (BACTERIA)
Protein coding sequence | Mannose tolerance,Selectable marker genes and reporter genes

BCH-GENE-SCBD-100269-8 NOPALINE SYNTHASE GENE 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-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 3272 vector pNOV7013 Maize containing thermostable alpha-amylase (for optimised bioethanol production) through introduction of the amy797E gene from Thermococcales (thermostable bacterium). The pmi gene expresses the PMI protein, which allows the transformed plants to use mannose as an energy source and is used as a selectable marker. **DNA insert from GA21 vector pDPG434** The GA21 line of maize was modified to be tolerant of glyphosate-containing herbicides. The isolated endogenous maize epsps gene was modified through site-directed mutagenesis, such that its encoded enzyme was insensitive to inactivation by glyphosate, and inserted into the inbred AT maize variety. For additional information on this LMO, please refer to the records of the parental LMOs.	EN

LMO characteristics

Modified traits

Resistance to herbicides
Use in industrial applications
Biofuel production
Selectable marker genes and reporter genes

Common use(s) of the LMO

Biofuel

Detection method(s)

External link(s)

? SYN-E3272-5 - EU Reference Laboratory for GM Food and Feed (EURL-GMFF) *(English)*

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

Additional Information

Other relevant website addresses and/or attached documents

? SYN-E3272-5 x MON-ØØØ21-9 - ISAAA *(English)*

BCH-LMO-SCBD-111992-2

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
413 rue Saint-Jacques, suite 800
Montreal, Québec, H2Y 1N9
Canada
Fax: +1 514 288-6588
Email: secretariat@cbd.int