

Biosafety Clearing-House (BCH)

LIVING MODIFIED ORGANISM (LMO)

BCH-LMO-SCBD-111621-1 EN DE

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

LAST UPDATED: 06 FEB 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.



Tobacco modified for xylanase production

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

<https://bch.cbd.int/database/record?documentID=111621>



Name

Tobacco modified for xylanase production

EN

Transformation event

XynZ No 34 and XynZ No 46

Developer(s)

- [ORGANIZATION](#): INSTITUT FÜR PFLANZENGENETIK UND KULTURPFLANZENFORSCHUNG | [BCH-CON-DE-49376-1](#)

ORGANIZATION

Institut für Pflanzengenetik und Kulturpflanzenforschung
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Description

The genetically modified tobacco plants constitutively express a shortened version of the xylanase gene from *Clostridium thermocellum* that is N-terminally fused to the signal peptide of the proteinase inhibitor II from potato, which leads to the gene product being into the apoplast.

EN

Xylan is a component of the hemicellulose of plant cell walls. It is degraded by xylanases. The transport into the apoplast removes the xylanase from the protease-rich intracellular space, preventing it from being degraded.

Despite the presence of the xylanase, no alteration in plant growth, susceptibility to pathogens and cell wall composition was observed in the transgenic tobacco plants.

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-12120-4](#) ORGANISM | NICOTIANA TABACUM (TOBACCO, TOBAC) |
Crops

Characteristics of the modification process

Vector

Derivative of pBIN19 EN

Techniques used for the modification

Agrobacterium-mediated DNA transfer

Genetic elements construct

P-35S-CaMV 0.000 kb	TP-pinII-SOLTU 0.000 kb	CS-xynZ-CLOTM 0.000 kb	T-ocs-RHIRD 0.000 kb
P-nos-RHIRD 0.000 kb	CS-nptII-ECOLX 0.000 kb	T-nos-RHIRD 0.000 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-100287-7](#) CAMV 35S PROMOTER |
Promoter

[BCH-GENE-SCBD-110883-1](#) PROTEINASE INHIBITOR II TRANSIT PEPTIDE | (POTATO) |
Transit signal

[BCH-GENE-SCBD-111594-1](#) XYLANASE Z GENE | (CLOTM) |
Protein coding sequence | Use in industrial applications

[BCH-GENE-SCBD-100271-5](#) OCTOPINE SYNTHASE GENE TERMINATOR |
Terminator

[BCH-GENE-SCBD-100270-6](#) NOPALINE SYNTHASE GENE PROMOTER |
Promoter

[BCH-GENE-SCBD-15001-5](#) NEOMYCIN PHOSPHOTRANSFERASE II | (BACTERIA) |
Protein coding sequence | Resistance to antibiotics (Kanamycin)

[BCH-GENE-SCBD-100269-8](#) NOPALINE SYNTHASE GENE TERMINATOR |

Terminator

LMO characteristics

Modified traits

Resistance to antibiotics

Kanamycin

Neomycin

Use in industrial applications

Common use(s) of the LMO

Research

Additional Information

Other relevant website addresses and/or attached documents

? [A Thermostable Xylanase from Clostridium thermocellum Expressed at High Levels in the Apoplast of Transgenic Tobacco Has No Detrimental Effects and Is Easily Purified \(English \)](#)

[BCH-LMO-SCBD-111621-1](#)

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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