

## Biosafety Clearing-House (BCH)

LIVING MODIFIED ORGANISM (LMO)

BCH-LMO-SCBD-110909-1 EN DE

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

LAST UPDATED: 12 SEP 2016

### 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.



Hybrid Aspen, female, modified for an altered morphology and reduced growth

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=110909>



Name

Hybrid Aspen, female, modified for an altered morphology and reduced growth

EN

Transformation event

Esch5: E2-1, E2-3, E2-5, E2-16

Developer(s)

- **PERSON:** BFH | [BCH-CON-SCBD-110855-3](#)

#### PERSON

BFH

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#### RELATED ORGANIZATION

Description

Aspen was modified with the insertion of the rolC gene, from *Agrobacterium rhizogenes*, which gives rise to hairy root disease in dicotyledonous plants. It produces a cytokinin-beta-

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glucosidase which can influence a number of developmental processes by altering the hormone balance.

In the transgenic plants rolC is expressed throughout the plant including in the in the leaves and internodes. As a result of the genetic modification plant growth is reduced and small, light green leaves are formed. Therefore, the transgenic aspen can be visually distinguished from the non-modified trees and can be used as a marker for the modification.

#### 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-105731-2** ORGANISM | POPULUS TREMULA X POPULUS TREMULOIDES (HYBRID ASPEN) |  
Trees

#### Related LMO(s)

**BCH-LMO-SCBD-110912-1** | Hybrid Aspen, female, modified for an altered morphology | BFH | Changes in quality and/or metabolite content (Pigmentation / Coloration), Resistance to antibiotics (Kanamycin)  
**BCH-LMO-SCBD-110910-1** | Aspen, female, modified for modified for an altered morphology and reduced growth | BFH | Changes in physiology and/or production (Growth rate), Changes in quality and/or metabolite content (Pigmentation / Coloration), Resistance to antibiotics (Kanamycin)  
**BCH-LMO-SCBD-110911-1** | Aspen, male, modified for modified for an altered morphology and reduced growth. | BFH | Changes in physiology and/or production (Growth rate), Changes in quality and/or metabolite content (Pigmentation / Coloration), Resistance to antibiotics (Kanamycin)

### Characteristics of the modification process

#### Vector

pPCV002-35S-rolC

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#### Techniques used for the modification

Agrobacterium-mediated DNA transfer

#### Genetic elements construct

P-35S-CaMV  
0.000 kb

CS-rolC-AGRRH  
0.000 kb

T-35S-CaMV  
0.000 kb

P-nos-RHIRD  
0.000 kb

CS-nptII-ECOLX  
0.000 kb

T-ocs-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-110886-1](#) ROOT LOCUS C GENE | (AGRRH) |

Protein coding sequence | Changes in physiology and/or production

[BCH-GENE-SCBD-100290-6](#) CAMV 35S 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-100271-5](#) OCTOPINE SYNTHASE GENE TERMINATOR |

Terminator

## LMO characteristics

Modified traits

Resistance to antibiotics

Kanamycin

Changes in physiology and/or production

Growth rate

Changes in quality and/or metabolite content

Pigmentation / Coloration

Common use(s) of the LMO

Research

## Additional Information

Other relevant website addresses and/or attached documents

? [Final report: Untersuchungen zur Stabilität und Expressivität fremder Gene in Aspenklonen \(Populus tremula und P. tremula x P. tremuloides\) unter Freilandbedingungen \(German only\) \( English \)](#)

? [Abschlussbericht: Untersuchungen zur Stabilität und Expressivität fremder Gene in Aspenklonen \(Populus tremula und P. tremula x P. tremuloides\) unter Freilandbedingungen \(deutsch\) \( German \)](#)

? [Genomic stability and long-term transgene expression in poplar. \( English \)](#)

? [The Biosafety of Forest Transgenic Trees. COST Action Number: FP0905 \( English \)](#)

[BCH-LMO-SCBD-110909-1](#)

## 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.

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