LIVING MODIFIED ORGANISM (LMO)

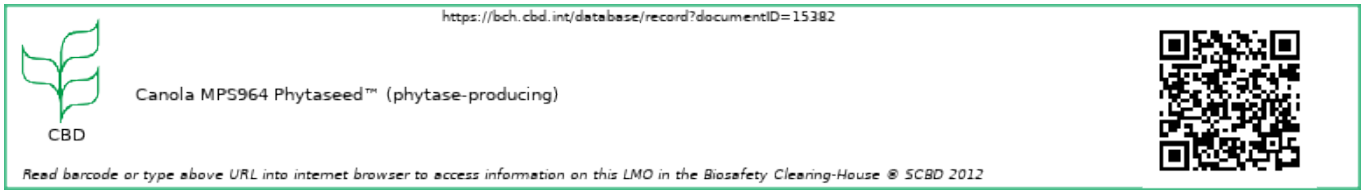
BCH-LMO-SCBD-15382-3

? Decisions on the LMO ? Risk Assessments

LAST UPDATED: 18 SEP 2012

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

Canola MPS964 Phytaseed™ (phytase-producing)	EN

Transformation event

MPS964

Developer(s)

- ORGANIZATION: BASF | BCH-CON-SCBD-15375-1

ORGANIZATION

BASF
Website: http://www.basf.com

Description

Canola lines MPS961, MPS962, MPS963, MPS964 and MPS965 have been modified to allow the plant to produce a fungal 3-phytase. This enzyme can be utilized to increase the breakdown of plant phytates which bind phosphorus. Phytate is the major storage form of phosphorus in many seeds and phytate-bound phosphorus is unavailable to monogastric animals. Since monogastric animals are not able to degrade this molecule, much of the phosphorus bound to phytate passes into the environment through the manure. Use of the enzyme and appropriate management techniques can lead to a reduction in the phosphorus content of manure, thus improving environmental conditions.	EN

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-12083-7 ORGANISM | BRASSICA NAPUS (TURNIP, RAPESEED, CANOLA PLANT, OILSEED RAPE, RAPE, BRANA)

Crops

Related LMO(s)

BCH-LMO-SCBD-15379-4 | Canola MPS961 Phytaseed™ (phytase-producing) | BASF | Changes in quality and/or metabolite content, Resistance to antibiotics (Kanamycin)

BCH-LMO-SCBD-15381-3 | Canola MPS962 Phytaseed™ (phytase-producing) | BASF | Changes in quality and/or metabolite content, Phytate degradation, Resistance to antibiotics (Kanamycin)

BCH-LMO-SCBD-15393-3 | Canola MPS963 Phytaseed™ (phytase-producing) | BASF | Changes in quality and/or metabolite content, Phytate degradation

BCH-LMO-SCBD-15380-3 | Canola MPS965 Phytaseed™ (phytase-producing) | BASF | Changes in quality and/or metabolite content, Phytate degradation, Resistance to antibiotics (Kanamycin)

Characteristics of the modification process

Vector

pMOG625 EN

Techniques used for the modification

Agrobacterium-mediated DNA transfer

Genetic elements construct

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-15378-5 PHYA GENE

Protein coding sequence | Changes in quality and/or metabolite content,Phytate degradation

BCH-GENE-SCBD-103918-3 CRUCIFERIN A GENE PROMOTER | (RAPESEED, CANOLA PLANT, CANOLA)

Promoter

BCH-GENE-SCBD-103919-1 CRUCIFERIN A GENE TERMINATOR | (RAPESEED, CANOLA PLANT, CANOLA)

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

Notes regarding the genetic elements present in this LMO

The phytase gene was obtained from Aspergillus niger var. van Tieghem, and expression of this gene produces the enzyme 3-phytase. The nptII gene was isolated from transposon Tn5 in Klebsiella pneumonia. The nptII protein, neomycin phosphotransferase II, confers resistance to some aminoglycoside antibiotics including neomycin and kanamycin, and was used by the firm as a selectable marker for transformed plant cells. The novel genetic material in the new canola lines was inserted into the canola variety, Westar, using Agrobacterium tumefaciens-mediated transformation with the disarmed Ti-plasmid pMOG625. The T-DNA contained both phytase and nptII genes. The phytase gene is under the control of the cruciferin A seed storage protein transcript promoter which includes a cruciferin signal peptide sequence. Its terminator is also from the cruciferin A seed storage protein transcript. Both controlling sequences were obtained from Brassica napus. The nptII gene is under the control of the NOS promoter and terminator with an Agrobacterium tumefaciens-derived open reading frame inserted between the gene and its terminator. The open reading frame consists of coding for 50 amino acids from the Agrobacterium ornithine-cyclo-deaminase.	EN

LMO characteristics

Modified traits

Resistance to antibiotics
- Kanamycin

Changes in quality and/or metabolite content

Other
- Phytate degradation

Common use(s) of the LMO

Food
Feed

Detection method(s)

Additional Information

Lines MPS961, MPS962, MPS963 and MPS964 do not carry the bacterial selection marker nptII, nor the bacterial origin of replication as demonstrated by Southern analyses. Only MPS965 of the transgenic lines contains an expressed neomycin phosphotransferase II gene.	EN

Additional Information

Other relevant website addresses and/or attached documents

? USFDA File Note BNF 000052 *(English)*

? Stable expression of Phytase (phyA) in canola (Brassica napus) seeds: towards a commercial product *(English)*

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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