

Biosafety Clearing-House (BCH)

LIVING MODIFIED ORGANISM (LMO)

BCH-LMO-SCBD-46122-5

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

LAST UPDATED: 28 AUG 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.



Rice containing cedar pollen peptide

<https://bch.cbd.int/database/record?documentID=46122>



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

Name

Rice containing cedar pollen peptide

EN

Transformation event

7Crp#10

Developer(s)

- **ORGANIZATION:** NATIONAL INSTITUTE OF AGROBIOLOGICAL SCIENCES | [BCH-CON-SCBD-46119-1](#)

ORGANIZATION

National Institute of Agrobiological Sciences

Website: http://www.nias.affrc.go.jp/index_e.html

Description

For the cedar pollen antigen proteins Cryj I and Cryj II which have been identified as the antigens causing cedar pollen allergy, the T cell epitope (12-19 amino acids), recognized by the cedar allergen specific T cells, has been investigated in detail. Then, based on the idea that if the T-cell epitopes of cedar allergen could be accumulated in the daily ingested rice, "the rice possibly offering the effects of mitigating or curing the Japanese cedar pollinosis by ingestion" could be developed based on the oral immune tolerance phenomenon, the epitope peptide accumulated rice was developed.

Nucleotide sequence to express the part of amino acid sequence contained in the antigen proteins Cryj I and Cryj II in the cedar pollens causing pollen allergy and recognized by the human cedar pollen antigen-specific T cell (hereinafter referred to as "human T cell epitope".

EN

At a total of seven (7) sites, three (3) in Cryj I and four (4) in Cryj II, the human T-cell epitopes, composed of 12 to 19 amino acid residues in length respectively, have been identified. In order to express the artificial peptide (7Crp) composed of 96 amino acid residues by linking the seven-site epitopes (amino acid sequence), the artificial gene was synthesized in accordance with the amino acid sequence of T cell epitope. For the synthesis, the frequently used codon was selected among the gene cluster which encodes the major rice seed storage proteins.

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-10454-5 ORGANISM | ORYZA SATIVA (RICE, ORYSA) |
Crops

Characteristics of the modification process

Vector

pGTV-35S-HPT EN

Techniques used for the modification

Agrobacterium-mediated DNA transfer

Genetic elements construct

P-GluB-1 2.300 kb	TP-GluB-1 0.072 kb	CS-7Crp 0.288 kb	TP-KDEL 0.012 kb	T-GluB-1 0.650 kb
P-35S-CaMV 0.800 kb	CS-hpt-ECOLX 1.100 kb	T-tr7-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-46121-3** 7CRP GENE | (JAPANESE CEDAR) |
Protein coding sequence | Changes in quality and/or metabolite content (Allergens)
- BCH-GENE-SCBD-103765-2** GLUTELIN GENE PROMOTER | (RICE) |
Promoter
- BCH-GENE-SCBD-103766-1** GLUTELIN SIGNAL PEPTIDE | (RICE) |
Transit signal
- BCH-GENE-SCBD-103023-2** KDEL ER RETENTION SIGNAL |
Transit signal
- BCH-GENE-SCBD-103767-1** GLUTELIN TERMINATOR | (RICE) |
Terminator
- BCH-GENE-SCBD-100287-7** CAMV 35S PROMOTER |

Promoter

[BCH-GENE-SCBD-14991-8](#) HYGROMYCIN B PHOSPHOTRANSFERASE GENE | (BACTERIA) |

Protein coding sequence | Resistance to antibiotics (Hygromycin), Selectable marker genes and reporter genes

[BCH-GENE-SCBD-103067-9](#) TRANSCRIPT 7 GENE 3' UNTRANSLATED REGION |

Terminator

LMO characteristics

Modified traits

Resistance to antibiotics

Hygromycin

Changes in quality and/or metabolite content

Allergens

Common use(s) of the LMO

Food

Additional Information

Other relevant website addresses and/or attached documents

? [7crp_10enRi.pdf](#) (*English*)

? [Biochemical Safety Evaluation of Transgenic Rice Seeds Expressing T Cell Epitopes of Japanese Cedar Pollen Allergens](#) (*English*)

[BCH-LMO-SCBD-46122-5](#)

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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