LIVING MODIFIED ORGANISM (LMO)

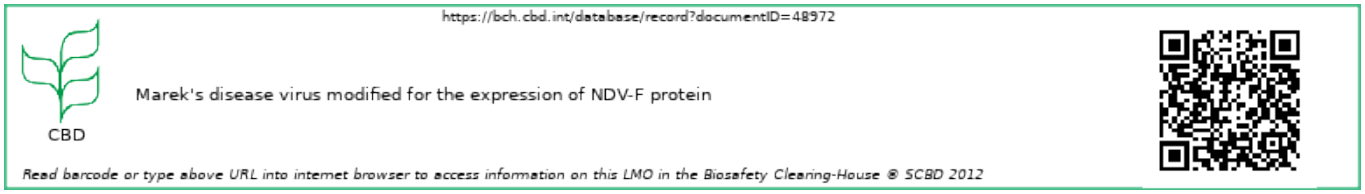
BCH-LMO-SCBD-48972-6

? Decisions on the LMO ? Risk Assessments

LAST UPDATED: 26 JAN 2015

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

Marek's disease virus modified for the expression of NDV-F protein | EN

Transformation event

Cellmune N

Developer(s)

- PERSON: AKINOBU FUNATSU | BCH-CON-SCBD-48970-2

PERSON

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RELATED ORGANIZATION

Description

Recombinant Marek's disease virus (a.k.a Gallid herpesvirus 2) modified to express NDV-F protein gene to generate a vaccine that helps aid in the protection against Newcastle and Marek's diseases in poultry. | 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-48969-9 ORGANISM | GALLID ALPHAHERPESVIRUS 2 |
Viruses

Point of collection or acquisition of the recipient organism or parental organisms

Marek's disease virus serotype 1 strain 207 EN

Characteristics of the modification process

Vector

pKA4BPF EN

Techniques used for the modification

Electroporation

Genetic elements construct

P-gB	CS-Fprotein-NDV	T-SV40-PA
0.500 kb	0.000 kb	0.250 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-103640-1 GLYCOPROTEIN B PROMOTER | (MAREK'S DISEASE VIRUS SEROTYPE 1 (MDV1)) |
Promoter

BCH-GENE-SCBD-103642-1 TRANSCRIPTION TERMINATION FACTOR |
Terminator

BCH-GENE-SCBD-105090-4 FUSION PROTEIN GENE | (NEWCASTLE DISEASE VIRUS) |
Protein coding sequence | Production of medical or pharmaceutical compounds (human or animal) (Vaccines)

Notes regarding the genetic elements present in this LMO

An insertion plasmid called pKA4BPF was engineered by cloning an expression cassette composed of gB promoter, F protein gene and transcription termination factor into the commercially available plasmid vector pUC119 and used for the development of the recombinant virus.

The gB promoter was used with the aim of effectively expressing the NDV-F protein gene (see below) in the cells infected with MDV1. It is known that the homologous UL28 of HSV1 functions by incorporating the virus DNA into viral particles. However, it is not known how the protein encoded by UL28 functions in MDV1.

Homologous recombination was conducted by transferring the insertion vector plasmid pKA4BPF into a chicken embryo primary cell line infected with the MDV1 CVI988 C17 strain, the recipient organism virus, based on electroporation.

The gB (glycoprotein B) promoter region was cloned from the CVI988 C17 strain of the Gallid EN

herpesvirus 2. It is a 0.5kb fragment amplified through PCR, with the EcoRI site added at each 5' end. The gB promoter sequence is configured mostly with the 3'-terminal of UL28 gene, containing 20% of its ORFs.

NDV-F gene derived from the avirulent Newcastle disease virus (NDV) D26 strain.

Transcription termination factor is a 0.25kb fragment derived from the commercially available expression plasmid pSVL. It contains the polyA addition signal and also the 3'-terminal sequence (77 bases) of large T antigen ORF of SV40 and the 3'-terminal sequence (61 bases) of VP1, the major virus capsid.

LMO characteristics

Modified traits

Production of medical or pharmaceutical compounds (human or animal)
Vaccines

Common use(s) of the LMO

Vaccine

Additional Information

Other relevant website addresses and/or attached documents

? Cellmune_NenRi.pdf *(English)*

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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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