

Biosafety Clearing-House (BCH)

GENETIC ELEMENT (GENE)

BCH-GENE-SCBD-103069-3

LAST UPDATED: 03 AUG 2012

General information

Name of genetic element

loxP recombination site

EN

Abbreviation

V-loxP

EN

Category

Other (recombination site)

Is this genetic element a synthetic molecule?

No

Donor organism

Donor organism(s)

[BCH-ORGA-SCBD-103068-4](#) ORGANISM | BACTERIOPHAGE P1 (PHAGE P1) |

Viruses

Characteristics of the protein coding sequence

Additional Information

Lox P (locus of X-over P1) is a site on the Bacteriophage P1 consisting of 34 bp which is recognised by the site specific Cre recombinase.

When cells that have loxP sites in their genome express Cre, a recombination event can occur between the loxP sites. The double stranded DNA is cut at both loxP sites by the Cre protein. The strands are then rejoined with DNA ligase in a quick and efficient process. The result of recombination depends on the orientation of the loxP sites. For two lox sites on the same chromosome arm, inverted loxP sites will cause an inversion of the intervening DNA, while a direct repeat of loxP sites will cause a deletion event. If loxP sites are on different chromosomes it is possible for translocation events to be catalysed by Cre induced recombination.

EN

Other relevant website addresses and/or attached documents

? [Cre-Lox recombination - Wikipedia](#) (*English*)

? [Site-specific DNA recombination in mammalian cells by the Cre recombinase of bacteriophage P1.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.

**Secretariat of the Convention
on Biological Diversity**

413 rue Saint-Jacques, suite 800
Montreal, Québec, H2Y 1N9
Canada

Fax: +1 514 288-6588

Email: secretariat@cbd.int