

pJW168 Cre/lox Vector Technical Specifications

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500 µl glycerol stock of plasmid in *E. coli*® 10G cells
Catalog No. 42200-1

Store at minus (-)86°C.

For *In Vitro* Research Use Only.

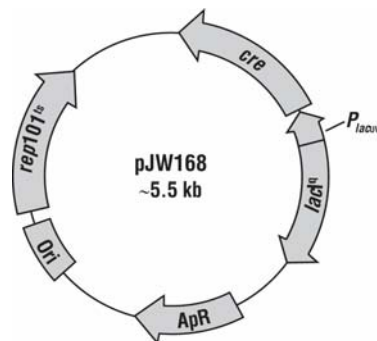
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pJW168 Vector for *in vivo* genetics using Cre/lox

Lucigen's pJW168 vector (Figure 1) is extremely useful for *in vivo* insertion/removal of a DNA sequence through *cre-lox* site-specific recombination.¹ The vector contains the *cre*-recombinase gene under the control of the IPTG-inducible *lacUV5* promoter. This vector also contains unique restriction sites for cloning and the gene for ampicillin selection.

The pJW168 vector can be eliminated by growing cells at 42°C. Its replication is based on the temperature-sensitive ts-replicon from pSC101. This vector avoids the need for purified, expensive Cre or Flp recombinase enzymes used for *in vitro* recombination. pJW168 also offers advantages over other *in vivo* insertion-removal systems, such as Flp recombinase/*FRT* sites and resolvases/*res* sites, as *E. coli* is a natural host for the Cre/*loxP* system of phage P1. Cre/*loxP* also has a smaller target (34 bp), than the resolvases/*res* sites (120-140 bp). With this system, DNA fragments are integrated and can be completely removed from the bacterial chromosome.²⁻⁴ Following recombination, growing transformed bacterial cultures at 42°C efficiently eliminates pJW168, and the production of *cre* recombinase ceases.

Figure 1. pJW168 vector map. Cre, Cre recombinase gene; P_{lacUV5}, lac promoter with UV5 mutation; lacI^q, lac repressor gene; ApR, ampicillin resistance gene; Ori, pSC101 origin of replication; rep101^{ts}, temperature sensitive replication protein.



References

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