

Cre Recombinase (vS-19): sc-83398

BACKGROUND

Cre Recombinase, also known as Recombinase Cre or Cre, is a 343 amino acid type I topoisomerase from P1 bacteriophage and belongs to the phage integrase family. Existing as a homotetramer when bound to DNA, Cre Recombinase functions to catalyze the site-specific recombination between two 34 base pair loxP recognition elements, thereby playing an important role in the maintenance of the phage genome. Due to its specific catalytic activity, Cre Recombinase is used as an experimental tool to modify genes and chromosomes, effectively producing mutated or tissue-specific knockout specimens that can be used to study viral infection and drug efficacy.

REFERENCES

1. Akagi, K., Sandig, V., Vooijs, M., Van der Valk, M., Giovannini, M., Strauss, M. and Berns, A. 1997. Cre-mediated somatic site-specific recombination in mice. *Nucleic Acids Res.* 25: 1766-1773.
2. Guo, F., Gopaul, D.N. and Van Duyne, G.D. 1999. Asymmetric DNA bending in the Cre-loxP site-specific recombination synapse. *Proc. Natl. Acad. Sci. USA* 96: 7143-7148.
3. Van Duyne, G.D. 2001. A structural view of Cre-loxP site-specific recombination. *Annu. Rev. Biophys Biomol. Struct.* 30: 87-104.
4. Łobocka, M.B., Rose, D.J., Plunkett, G., Rusin, M., Samojedny, A., Lehnerr, H., Yarmolinsky, M.B. and Blattner, F.R. 2004. Genome of bacteriophage P1. *J. Bacteriol.* 186: 7032-7068.
5. Ghosh, K., Lau, C.K., Gupta, K. and Van Duyne, G.D. 2005. Preferential synapsis of loxP sites drives ordered strand exchange in Cre-loxP site-specific recombination. *Nat. Chem. Biol.* 1: 275-282.
6. Ghosh, K., Guo, F. and Van Duyne, G.D. 2007. Synapsis of loxP sites by Cre recombinase. *J. Biol. Chem.* 282: 24004-24016.
7. Bucholtz, F. 2008. Principles of site-specific recombinase (SSR) technology. *J. Vis. Exp.* pii: 718
8. Wolfe, A., Divall, S., Singh, S.P., Nikrodhanond, A.A., Baria, A.T., Le, W.W., Hoffman, G.E. and Radovick, S. 2008. Temporal and spatial regulation of Cre Recombinase expression in gonadotrophin-releasing hormone neurones in the mouse. *J. Neuroendocrinol.* 20: 909-916.

SOURCE

Cre Recombinase (vS-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Cre Recombinase of viral origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-83398 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-83398 X, 200 µg/0.1 ml.

APPLICATIONS

Cre Recombinase (vS-19) is recommended for detection of Cre Recombinase of V origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Cre Recombinase (vS-19) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Cre Recombinase: 39 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.