

CTCF (h): 293T Lysate: sc-170327

BACKGROUND

CTCF belongs to the zinc finger transcription factor family and recognizes unusually long and remarkably divergent DNA target sequences to influence expression of many various genes. The DNA-binding domain of CTCF is composed of 11 Zn fingers including 10 that are of C₂H₂ class and one that is of C₂HC class, and they are highly conserved between vertebrate species. CTCF functions as a repressor of the c-Myc gene and as a regulator of lysozyme gene expression. In addition, CTCF associates with the essential activator domain in the promoter region of the β -Amyloid protein precursor (APP) gene to activate transcription of APP. Expression of CTCF upregulates APP expression and thereby enhances synapse formations between primary neurons during development. CTCF is ubiquitously expressed and localized to the nucleus. During terminal differentiation, CTCF is negatively regulated by differential phosphorylation and also by decreases in CTCF mRNA and protein expression.

REFERENCES

1. Klenova, E.M., et al. 1993. CTCF, a conserved nuclear factor required for optimal transcriptional activity of the chicken c-Myc gene, is an 11 Zn finger protein differentially expressed in multiple forms. *Mol. Cell. Biol.* 13: 7612-7624.
2. Filippova, G.N., et al. 1996. An exceptionally conserved transcriptional repressor, CTCF, employs different combinations of zinc fingers to bind diverged promoter sequences of avian and mammalian c-Myc oncogenes. *Mol. Cell. Biol.* 16: 2802-2813.
3. Vostrov, A.A., et al. 1997. The zinc finger protein CTCF binds to the APB β domain of the amyloid β -protein precursor promoter. Evidence for a role in transcriptional activation. *J. Biol. Chem.* 272: 33353-33359.
4. Awad, T.A., et al. 1999. Negative transcriptional regulation mediated by thyroid hormone response element 144 requires binding of the multivalent factor CTCF to a novel target DNA sequence. *J. Biol. Chem.* 274: 27092-27098.
5. Bell, A.C., et al. 1999. The protein CTCF is required for the enhancer blocking activity of vertebrate insulators. *Cell* 98: 387-396.
6. Yang, Y., et al. 1999. CTCF is essential for upregulating expression from the amyloid precursor protein promoter during differentiation of primary hippocampal neurons. *J. Neurochem.* 73: 2286-2298.

CHROMOSOMAL LOCATION

Genetic locus: CTCF (human) mapping to 16q22.1.

PRODUCT

CTCF (h): 293T Lysate represents a lysate of human CTCF transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

CTCF (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive CTCF antibodies. Recommended use: 10-20 μ l per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

RESEARCH USE

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

PROTOCOLS

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