

# CTCF (48): sc-136284

## 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 C<sub>2</sub>H<sub>2</sub> class and one that is of C<sub>2</sub>HC 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  $\beta$ -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

- 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.
- 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.
- Vostrov, A.A., et al. 1997. The zinc finger protein CTCF binds to the APB $\beta$  domain of the Amyloid  $\beta$ -protein precursor promoter. Evidence for a role in transcriptional activation. *J. Biol. Chem.* 272: 33353-33359.
- 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.
- Bell, A.C., et al. 1999. The protein CTCF is required for the enhancer blocking activity of vertebrate insulators. *Cell* 98: 387-396.
- 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; Ctfc (mouse) mapping to 8 D3.

## SOURCE

CTCF (48) is a mouse monoclonal antibody raised against amino acids 184-290 of CTCF of human origin.

## PRODUCT

Each vial contains 50  $\mu$ g IgG<sub>1</sub> in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

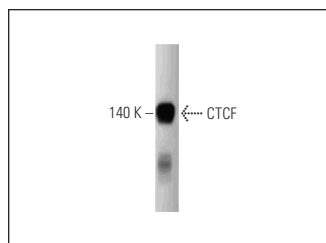
CTCF (48) is recommended for detection of CTCF of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for CTCF siRNA (h): sc-35124, CTCF siRNA (m): sc-35125, CTCF shRNA Plasmid (h): sc-35124-SH, CTCF shRNA Plasmid (m): sc-35125-SH, CTCF shRNA (h) Lentiviral Particles: sc-35124-V and CTCF shRNA (m) Lentiviral Particles: sc-35125-V.

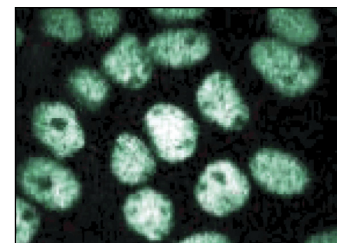
Molecular Weight of CTCF: 150 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HeLa nuclear extract: sc-2120 or K-562 nuclear extract: sc-2130.

## DATA



CTCF (48): sc-136284. Western blot analysis of CTCF expression in Jurkat whole cell lysate.



CTCF (48): sc-136284. Immunofluorescence staining of A-431 cells showing nuclear localization.

## 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. Not for resale.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.