

# CTCF (B-5): sc-271514

## BACKGROUND

CTCF belongs to the zinc finger transcription factor family, and it 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 1 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 Amyloid  $\beta$ -protein precursor (APP) gene to activate transcription of APP. Expression of CTCF up-regulates 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.

## CHROMOSOMAL LOCATION

Genetic locus: CTCF (human) mapping to 16q22.1; Ctf (mouse) mapping to 8 D3.

## SOURCE

CTCF (B-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 643-687 near the C-terminus of CTCF of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-271514 X, 200  $\mu$ g/0.1 ml.

CTCF (B-5) is available conjugated to agarose (sc-271514 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271514 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271514 PE), fluorescein (sc-271514 FITC), Alexa Fluor® 488 (sc-271514 AF488), Alexa Fluor® 546 (sc-271514 AF546), Alexa Fluor® 594 (sc-271514 AF594) or Alexa Fluor® 647 (sc-271514 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271514 AF680) or Alexa Fluor® 790 (sc-271514 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271514 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

## STORAGE

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

## PROTOCOLS

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

## APPLICATIONS

CTCF (B-5) is recommended for detection of CTCF of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], 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).

CTCF (B-5) is also recommended for detection of CTCF in additional species, including canine.

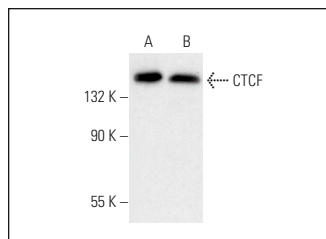
Suitable for use as control antibody for CTCF siRNA (h): sc-35124, CTCF siRNA (m): sc-35125, CTCF shRNA Plasmid (h): sc-35124-SH, CTCF shRNA Plasmid (m): sc-35125-SH, CTCF shRNA (h) Lentiviral Particles: sc-35124-V and CTCF shRNA (m) Lentiviral Particles: sc-35125-V.

CTCF (B-5) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

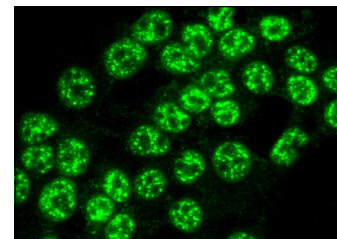
Molecular Weight of CTCF: 150 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, MCF7 whole cell lysate: sc-2206 or Jurkat whole cell lysate: sc-2204.

## DATA



CTCF (B-5): sc-271514. Western blot analysis of CTCF expression in HeLa nuclear extract (A) and MCF7 whole cell lysate (B).



CTCF (B-5): sc-271514. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization.

## SELECT PRODUCT CITATIONS

1. Zhang, F., et al. 2019. NDRG1 facilitates the replication and persistence of Kaposi's sarcoma-associated herpesvirus by interacting with the DNA polymerase clamp PCNA. *PLoS Pathog.* 15: e1007628.
2. Lehman, B.J., et al. 2021. Dynamic regulation of CTCF stability and sub-nuclear localization in response to stress. *PLoS Genet.* 17: e1009277.
3. Del Pilar Contreras-Marciales, A., et al. 2022. Characterization of the promoter region of the murine Catsper2 gene. *FEBS Open Bio* 12: 2236-2249.
4. Hyle, J., et al. 2023. Auxin-inducible degron 2 system deciphers functions of CTCF domains in transcriptional regulation. *Genome Biol.* 24: 14.
5. Camerino, M., et al. 2024. Analysis of long-range chromatin contacts, compartments and looping between mouse embryonic stem cells, lens epithelium and lens fibers. *Epigenetics Chromatin* 17: 10.

## RESEARCH USE

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