

# CTCF (C-20): sc-15914

## 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 ten 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 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

CTCF (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of CTCF of human 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-15914 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-15914 X, 200 µg/0.1 ml.

## APPLICATIONS

CTCF (C-20) 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 µg per 100-500 µg 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 (C-20) is also recommended for detection of CTCF in additional species, including equine, canine, bovine and porcine.

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 (C-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

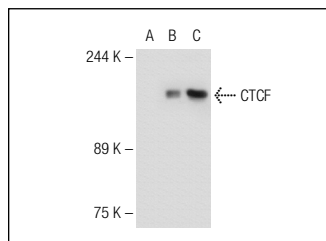
Molecular Weight of CTCF: 150 kDa.

Positive Controls: CTCF (h): 293T Lysate: sc-170327, Jurkat nuclear extract: sc-2132 or HeLa nuclear extract: sc-2120.

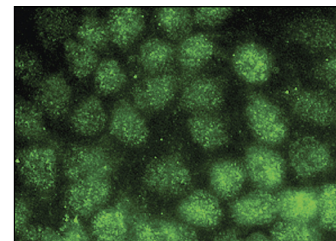
## STORAGE

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

## DATA



CTCF (C-20): sc-15914. Western blot analysis of CTCF expression in non-transfected: sc-117752 (A) and human CTCF transfected: sc-170327 (B) 293T whole cell lysates and Jurkat nuclear extract (C).



CTCF (C-20): sc-15914. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

## SELECT PRODUCT CITATIONS

- Butcher, D.T., et al. 2004. DNA binding sites for putative methylation boundaries in the unmethylated region of the BRCA1 promoter. *Int. J. Cancer* 111: 669-678.
- Carr, M.S., et al. 2007. Allele-specific histone modifications regulate expression of the DLK1-GTL2 imprinted domain. *Genomics* 89: 280-290.
- Donohoe, M.E., et al. 2007. Identification of a CTCF cofactor, YY1, for the X chromosome binary switch. *Mol. Cell* 25: 43-56.
- Sun, L., et al. 2008. DNA methyltransferase 1 and 3B activate Bag-1 expression via recruitment of CTCF/BORIS and modulation of promoter histone methylation. *Cancer Res.* 68: 2726-2735.
- Nguyen, P., et al. 2008. CTCF/BORIS is a methylation-independent DNA-binding protein that preferentially binds to the paternal H19 differentially methylated region. *Cancer Res.* 68: 5546-5551.
- Akan, P., et al. 2009. A histone map of human chromosome 20q13.12. *PLoS ONE* 4: e4479.
- Chen, Y., et al. 2011. c-Myc activates BRCA1 gene expression through distal promoter elements in breast cancer cells. *BMC Cancer* 11: 246.
- Spencer, R.J., et al. 2011. A boundary element between Tsix and Xist binds the chromatin insulator Ctf and contributes to initiation of X-chromosome inactivation. *Genetics* 189: 441-454.

## RESEARCH USE

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



Try **CTCF (G-8): sc-271474** or **CTCF (B-5): sc-271514**, our highly recommended monoclonal alternatives to CTCF (C-20).