

CTCF monoclonal antibody

Catalog: MB66997

Host:

Mouse

Reactivity: Human, Rat

BackGround:

CCCTC-binding factor (CTCF) and its paralog, the Brother of the Regulator of Imprinted Sites (BORIS), are highly conserved transcription factors that regulate transcriptional activation and repression, insulator function, and imprinting control regions (ICRs). Although they have divergent amino and carboxy termini, both proteins contain 11 conserved zinc finger domains that work in combination to bind the same DNA elements . CTCF is ubiquitously expressed and contributes to transcriptional regulation of cell-growth regulated genes, including c-Myc, p19/ARF, p16/INK4A, BRCA1, p53, p27, E2F1, and TERT . CTCF also binds to and is required for the enhancer-blocking activity of all known insulator ele-ICRs, ments and including the H19/IgF2, Prader-Willi/Angelman syndrome, and Inactive X-Specific Transcript (XIST) anti-sense loci . CTCF DNA-binding is sensitive to DNA methylation, a mark that determines selection of the imprinted allele (maternal vs. paternal) . The various functions of CTCF are regulated by at least two different post-translational modifications. Poly(ADP-ribosyl)ation of CTCF is required for insulator function . Phosphorylation of Ser612 by protein kinase CK2 facilitates a switch of CTCF from a transcriptional repressor to an activator at the c-Myc promoter . CTCF mutations or deletions have been found in many breast, prostate, and Wilms' tumors . Expression of BO-RIS is restricted to spermatocytes and is mutually exclusive of CTCF. In cells expressing BORIS, promoters of X-linked cancer-testis antigens like MAGE-A1 are demethylated and activated, but methylated and inactive in CTCF-expressing somatic cells . Like other testis specific proteins, BORIS is abnormally expressed in different cancers, such as breast cancer, and has a greater affinity than CTCF for DNA-binding sites, detracting from CTCF's potential tumor suppressing activity.

Product:

Mouse IgG1 kappa. Liquid in PBS, pH 7.3, 30% glycerol, and 0.01% sodium azide.

Molecular Weight:

~ 140 kDa

Swiss-Prot:

P49711

Purification&Purity:

This antibody is purified through a protein G column.

Applications:

WB (1/1000 - 1/2000)

Storage&Stability:

Store at $4 \,^{\circ}{\rm C}$ short term. Aliquot and store at $-20 \,^{\circ}{\rm C}$ long term. Avoid freeze-thaw cycles.

Specificity:

Recognizes endogenous levels of CTCF protein.

DATA:



Western blot analysis of CTCF expression in K562 (A), Jurkat (B), Hela (C), C6 (D), MOLT4 (E) whole cell lysates.

Note:

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

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