

CTCF antibody (pAb)

Catalog Nos: 61311, 61932, 61312

RRID: AB_2614975

Application(s): ChIP, ChIP-Seq, CUT&RUN, CUT&Tag, EMSA, ICC, IHC, WB

Reactivity: Human

Volumes: 100 µl, 50 µl, 10 µl

Purification: Affinity Purified

Host: Rabbit

Isotype: IgG

Concentration: 1.0 µg/µl

Molecular Weight: 120 kDa

Background: CTCF (CCCTC-binding factor, zinc finger protein) is a chromatin binding factor that binds to DNA sequence specific sites. Involved in transcriptional regulation by binding to chromatin insulators and preventing interaction between promoter and nearby enhancers and silencers. Acts as transcriptional repressor binding to promoters of vertebrate MYC gene and BAG1 gene. Also binds to the PLK and PIM1 promoters. Acts as a transcriptional activator of APP. Regulates APOA1/C3/A4/A5 gene cluster and controls MHC class II gene expression. Plays an essential role in oocyte and preimplantation embryo development by activating or repressing transcription. Seems to act as tumor suppressor. Plays a critical role in the epigenetic regulation. Participates in the allele-specific gene expression at the imprinted IGF2/H19 gene locus. On the maternal allele, binding within the H19 imprinting control region (ICR) mediates maternally inherited higher-order chromatin conformation to restrict enhancer access to IGF2. Plays a critical role in gene silencing over considerable distances in the genome. Preferentially interacts with unmethylated DNA, preventing spreading of CpG methylation and maintaining methylation-free zones. Inversely, binding to target sites is prevented by CpG methylation. Plays an important role in chromatin remodeling. Can dimerize when it is bound to different DNA sequences, mediating long-range chromatin looping. Mediates interchromosomal association between IGF2/H19 and WSB1/NF1 and may direct distant DNA segments to a common transcription factory. Causes local loss of histone acetylation and gain of histone methylation in the beta-globin locus, without affecting transcription. When bound to chromatin, it provides an anchor point for nucleosomes positioning. Seems to be essential for homologous X-chromosome pairing.

Immunogen: This CTCF antibody was raised against a peptide within the N-terminal region of human CTCF.

Buffer: Purified IgG in PBS with 30% glycerol and 0.035% sodium azide. Sodium azide is highly toxic.

Application Notes:

Applications Validated by Active Motif:

ChIP: 2 - 8 µl per ChIP

ChIP-Seq: 4 µg per ChIP

ICC/IF: 1:2,000 dilution

WB: 1:500- 1:2,000 dilution

IHC(FFPE): 1:1000 dilution

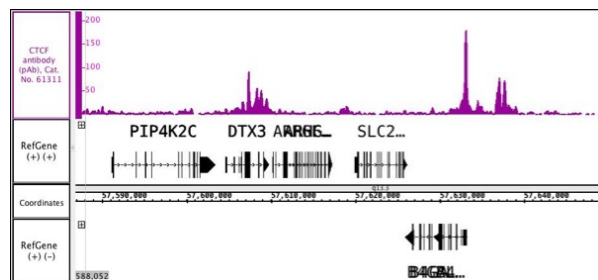
CUT&Tag* 1 µl per 50 µl reaction

CUT&RUN: 1 µl per 50 µl reaction

*This antibody has been validated for CUT&Tag using Active Motif's CUT&Tag-IT™ Assay Kit, Catalog No. 53160. Note: Many chromatin-bound proteins are not soluble in a low salt nuclear extract and fractionate to the pellet. Therefore, we recommend a High Salt / Sonication Protocol when preparing nuclear extracts for Western blot.

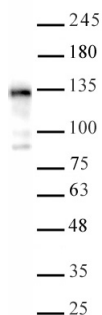
For CTCF, we also offer AbFlex® CTCF Recombinant Antibody (rAb). For details, see Catalog No. 91285.

Storage and Guarantee: Some products may be shipped at room temperature. This will not affect their stability or performance. Avoid repeated freeze/thaw cycles by aliquoting items into single-use fractions for storage at -20°C for up to 2 years. Keep all reagents on ice when not in storage. This product is guaranteed for 12 months from date of receipt. This product is for research use only and is not for use in diagnostic procedures.



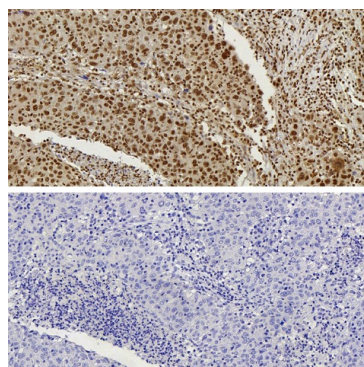
CTCF antibody (rAb) tested by ChIP-Seq

Chromatin immunoprecipitation (ChIP) was performed using the ChIP-IT® High Sensitivity Kit (Cat. No. 53040) with MCF7-SER breast cancer cell line chromatin and 4 µg of CTCF antibody. ChIP DNA was sequenced on the Illumina NextSeq and 15.4 million sequence tags were mapped to identify CTCF binding sites on chromosome 12.



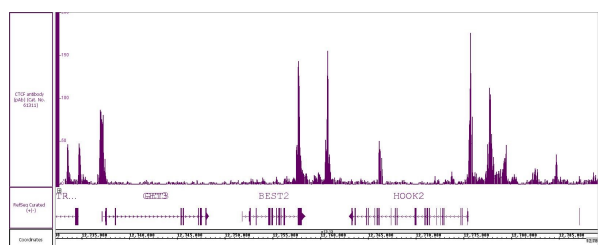
CTCF pAb tested by Western blot.

The analysis was performed using 20 µg HeLa nuclear cell extract and CTCF antibody at a 1:1000 dilution.



CTCF antibody (pAb) tested by Immunohistochemistry

Nuclear staining pattern is detected in Formalin-fixed, paraffin-embedded tissue sections from human breast carcinoma. Top Panel: CTCF antibody at 1:1000 dilution. Bottom Panel: No primary antibody (2nd step antibody alone)



CTCF antibody (pAb) tested by CUT&RUN

CUT&RUN was performed using 500,000 K562 cells and sequenced using 38 base-pair, paired-end reads on the Illumina NovaSeq. Data was collected from 32 million reads, and CTCF data is shown for Chromosome 19.