

# CTCF Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP21506c

## Product Information

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<b>Application</b>	WB, IHC-P, E
<b>Primary Accession</b>	<a href="#">P49711</a>
<b>Reactivity</b>	Human, Mouse
<b>Host</b>	Rabbit
<b>Clonality</b>	polyclonal
<b>Isotype</b>	Rabbit IgG
<b>Clone Names</b>	RB53773
<b>Calculated MW</b>	82785

## Additional Information

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<b>Gene ID</b>	10664
<b>Other Names</b>	Transcriptional repressor CTCF, 11-zinc finger protein, CCCTC-binding factor, CTCFL paralog, CTCF
<b>Target/Specificity</b>	This CTCF antibody is generated from a rabbit immunized with a KLH conjugated synthetic peptide between 334-364 amino acids from the Central region of human CTCF.
<b>Dilution</b>	WB~~1:2000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
<b>Format</b>	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
<b>Storage</b>	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
<b>Precautions</b>	CTCF Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

## Protein Information

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<b>Name</b>	CTCF
<b>Function</b>	Chromatin binding factor that binds to DNA sequence specific sites and regulates the 3D structure of chromatin (PubMed: <a href="#">16949368</a> , PubMed: <a href="#">18347100</a> , PubMed: <a href="#">18654629</a> , PubMed: <a href="#">19322193</a> ). Binds together strands of DNA, thus forming chromatin loops, and anchors DNA to cellular structures, such as the nuclear lamina (PubMed: <a href="#">18347100</a> ,

PubMed:[18654629](#), PubMed:[19322193](#)). Defines the boundaries between active and heterochromatic DNA via binding to chromatin insulators, thereby preventing interaction between promoter and nearby enhancers and silencers (PubMed:[18347100](#), PubMed:[18654629](#), PubMed:[19322193](#)). Participates in the allele-specific gene expression at the imprinted IGF2/H19 gene locus (PubMed:[16107875](#), PubMed:[16815976](#), PubMed:[17827499](#)). 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 (By similarity). Mediates interchromosomal association between IGF2/H19 and WSB1/NF1 and may direct distant DNA segments to a common transcription factory (By similarity). Regulates asynchronous replication of IGF2/H19 (By similarity). Plays a critical role in gene silencing over considerable distances in the genome (By similarity). Preferentially interacts with unmethylated DNA, preventing spreading of CpG methylation and maintaining methylation-free zones (PubMed:[18413740](#)). Inversely, binding to target sites is prevented by CpG methylation (PubMed:[18413740](#)). Plays an important role in chromatin remodeling (PubMed:[18413740](#)). Can dimerize when it is bound to different DNA sequences, mediating long-range chromatin looping (PubMed:[12191639](#)). Causes local loss of histone acetylation and gain of histone methylation in the beta-globin locus, without affecting transcription (PubMed:[12191639](#)). When bound to chromatin, it provides an anchor point for nucleosomes positioning (PubMed:[12191639](#)). Seems to be essential for homologous X-chromosome pairing (By similarity). May participate with Tsix in establishing a regulatable epigenetic switch for X chromosome inactivation (PubMed:[11743158](#)). May play a role in preventing the propagation of stable methylation at the escape genes from X-inactivation (PubMed:[11743158](#)). Involved in sister chromatid cohesion (PubMed:[12191639](#)). Associates with both centromeres and chromosomal arms during metaphase and required for cohesin localization to CTCF sites (PubMed:[18550811](#)). Plays a role in the recruitment of CENPE to the pericentromeric/centromeric regions of the chromosome during mitosis (PubMed:[26321640](#)). Acts as a transcriptional repressor binding to promoters of vertebrate MYC gene and BAG1 gene (PubMed:[18413740](#), PubMed:[8649389](#), PubMed:[9591631](#)). Also binds to the PLK and PIM1 promoters (PubMed:[12191639](#)). Acts as a transcriptional activator of APP (PubMed:[9407128](#)). Regulates APOA1/C3/A4/A5 gene cluster and controls MHC class II gene expression (PubMed:[18347100](#), PubMed:[19322193](#)). Plays an essential role in oocyte and preimplantation embryo development by activating or repressing transcription (By similarity). Seems to act as tumor suppressor (PubMed:[12191639](#)).

#### Cellular Location

Nucleus, nucleoplasm. Chromosome. Chromosome, centromere. Note=May translocate to the nucleolus upon cell differentiation. Associates with both centromeres and chromosomal arms during metaphase. Associates with the H19 ICR in mitotic chromosomes. May be preferentially excluded from heterochromatin during interphase

#### Tissue Location

Ubiquitous. Absent in primary spermatocytes.

## Background

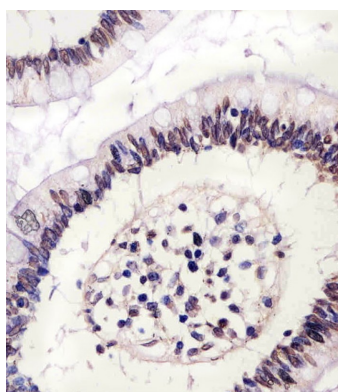
Chromatin binding factor that binds to DNA sequence specific sites. Involved in transcriptional regulation by binding to chromatin insulators and preventing interaction between promoter and nearby enhancers and silencers. Acts as transcriptional repressor binding to promoters of vertebrate MYC gene and 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. May participate with Tsix in establishing a regulatable epigenetic switch for X chromosome inactivation. May play a role in preventing the propagation of stable methylation at the escape genes from X- inactivation. Involved in sister chromatid cohesion. Associates with both centromeres and chromosomal arms during metaphase and required for cohesin localization to CTCF sites. Regulates asynchronous replication of IGF2/H19.

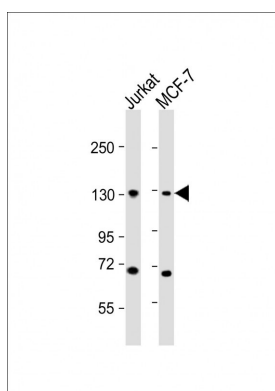
## References

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 Filippova G.N., et al. Genes Chromosomes Cancer 22:26-36(1998).  
 Filippova G.N., et al. Cancer Res. 62:48-52(2002).  
 Kalnine N., et al. Submitted (AUG-2003) to the EMBL/GenBank/DDBJ databases.  
 Totoki Y., et al. Submitted (MAR-2005) to the EMBL/GenBank/DDBJ databases.

## Images



AP21506c staining CTCF in human colon tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 3% BSA for 0.5 hour at room temperature; antigen retrieval was by heat mediation with a citrate buffer (pH6). Samples were incubated with primary antibody (1/25) for 1 hour at 37°C. A undiluted biotinylated goat polyvalent antibody was used as the secondary antibody.



All lanes : Anti-CTCF Antibody (Center) at 1:2000 dilution  
 Lane 1: Jurkat whole cell lysates Lane 2: MCF-7 whole cell lysates  
 Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution  
 Predicted band size : 83 kDa  
 Blocking/Dilution buffer: 5% NFDM/TBST.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.