

Ctcf (13T14) Rat Monoclonal Antibody

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Catalog # AP93639

Product Information

Application	WB, IP
Primary Accession	Q61164
Reactivity	Mouse
Clonality	Monoclonal
Calculated MW	83745

Additional Information

Gene ID	13018
Other Names	Transcriptional repressor CTCF, 11-zinc finger protein, CCCTC-binding factor, CTCFL paralog, Ctcf
Dilution	WB~~1:1000 IP~~N/A
Storage Conditions	-20°C

Protein Information

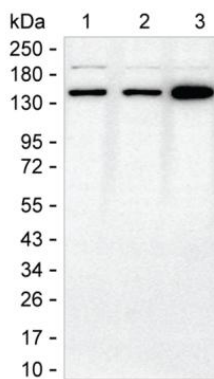
Name	Ctcf
Function	<p>Chromatin binding factor that binds to DNA sequence specific sites and regulates the 3D structure of chromatin (PubMed:28388437). Binds together strands of DNA, thus forming chromatin loops, and anchors DNA to cellular structures, such as the nuclear lamina (PubMed:28388437). Defines the boundaries between active and heterochromatic DNA via binding to chromatin insulators, thereby preventing interaction between promoter and nearby enhancers and silencers (PubMed:28388437). Plays a critical role in the epigenetic regulation (By similarity). Participates in the allele-specific gene expression at the imprinted IGF2/H19 gene locus (PubMed:16614224). 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 (PubMed:16614224). Mediates interchromosomal association between IGF2/H19 and WSB1/NF1 and may direct distant DNA segments to a common transcription factory (PubMed:16614224). Regulates asynchronous replication of IGF2/H19 (PubMed:17329968). Plays a critical role in gene silencing over considerable distances in the genome (PubMed:16951251). Preferentially interacts with unmethylated DNA, preventing spreading of CpG methylation and maintaining methylation-free zones (By similarity). Inversely, binding to target sites is prevented by CpG methylation (By similarity). Plays an important role in chromatin remodeling (By similarity). Can dimerize when it is bound to</p>

different DNA sequences, mediating long-range chromatin looping (By similarity). Causes local loss of histone acetylation and gain of histone methylation in the beta-globin locus, without affecting transcription (PubMed:[16951251](#)). When bound to chromatin, it provides an anchor point for nucleosomes positioning (By similarity). Seems to be essential for homologous X- chromosome pairing (PubMed:[17952071](#)). May participate with Tsix in establishing a regulatable epigenetic switch for X chromosome inactivation (PubMed:[11743158](#), PubMed:[15669143](#), PubMed:[17952071](#)). May play a role in preventing the propagation of stable methylation at the escape genes from X-inactivation (PubMed:[11743158](#), PubMed:[15669143](#), PubMed:[17952071](#)). Involved in sister chromatid cohesion (By similarity). Associates with both centromeres and chromosomal arms during metaphase and required for cohesin localization to CTCF sites (By similarity). Plays a role in the recruitment of CENPE to the pericentromeric/centromeric regions of the chromosome during mitosis (By similarity). Acts as a transcriptional repressor binding to promoters of vertebrate MYC gene and BAG1 gene (By similarity). Also binds to the PLK and PIM1 promoters (By similarity). Acts as a transcriptional activator of APP (By similarity). Regulates APOA1/C3/A4/A5 gene cluster and controls MHC class II gene expression (By similarity). Plays an essential role in oocyte and preimplantation embryo development by activating or repressing transcription (PubMed:[18614575](#)). Seems to act as tumor suppressor (By similarity).

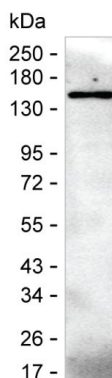
Cellular Location

Nucleus, nucleoplasm. Chromosome {ECO:0000250|UniProtKB:P49711}. Chromosome, centromere {ECO:0000250|UniProtKB:P49711}. 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. {ECO:0000250|UniProtKB:P49711}

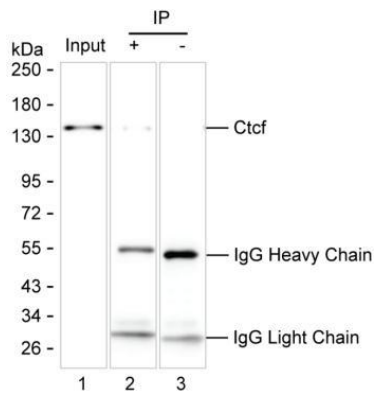
Images



Various protein samples were run on 6-18% SDS-PAGE under reducing conditions and blotted onto nitrocellulose membrane. AP93639 at 1 µg/mL was used as the primary antibody and peroxidase conjugated goat anti-rat IgG was used as the secondary antibody. CTCF band was visualized using ECL Western Blotting Substrate. Lane 1: 15 µg of HeLa lysate Lane 2: 15 µg of Jurkat lysate Lane 3: 15 µg of MOLT-4 lysate Result: AP93639 can detect CTCF by Western blotting.



15 µg of NIH/3T3 lysate was run on 6-18% SDS-PAGE under reducing conditions and blotted onto nitrocellulose membrane. AP93639 at 1 µg/mL was used as the primary antibody and peroxidase conjugated goat anti-rat IgG was used as the secondary antibody. CTCF band was visualized using ECL Western Blotting Substrate. Result: AP93639 can detect CTCF by Western blotting.



Immunoprecipitation was performed by incubation of 2.5 μ g AP93639 with MOLT-4 lysate containing 200 μ g total protein. After absorption with Protein G beads, the mixture was run on 6-18% SDS-PAGE and blotted onto nitrocellulose membrane. Anti-CTCF at 1 μ g/mL was used as the primary antibody and peroxidase conjugated goat anti-mouse IgG (which cross reacts with rat IgG) was used as the secondary antibody. The isotype control antibody was anti-KLH antibody. Lane 1: MOLT-4 lysate Lane 2: CTCF immunoprecipitated from MOLT-4 lysate by AP93639 Lane 3: The same as Lane 2 but anti-KLH antibody was used as IgG isotype control antibody Result: AP93639 can immunoprecipitate CTCF.

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