



Recombinant Human Transcriptional repressor CTCF (CTCF), partial

Product Code	CSB-CF006138HU1
Relevance	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 a 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. Plays a role in the recruitment of CENPE to the pericentromeric/centromeric regions of the chromosome during mitosis
Abbreviation	Recombinant Human CTCF protein, partial
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P49711
Product Type	Transmembrane Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.



Sequence

FQCELCSYTCPRRSNLDHRHMKSHTDERPHKCHLCGRAFRVTLLRNHLNTHT
GTRPHKCPDCDMAFVTSGELVRHRRYKHTHEKPFKCSMCDYASVEVSKLKR
HIRSHTGERPFQCSLCSYASRDITYKLKRHMRTHSGEKPYECYICHARFTQSGT
MKMHILQKHTENVAKFHCPHCDTVIARKSDLGVHLRKQHSYIEQGKKCRYCDA
VFHERYALIQHQKSHKNEKRFKCDQCDYACRQERHMIMHKRTHHTGEKPYACS
HCDKTRQKQLLDMHFKRYHDPNFVPAAFVCSKCGKTFTRRNTMARHADNC
AGPDGVEGENGGETKSKRGRKRKMRSKKEDSSDSENAEPDLDDNEDEEEP
AVEIEPEPEPQPVTAPPPAKKRRGRPPGRTNQPKQNQPTAIQVEDQNTGAI
ENIIVEVKKEPDAEPAEGEEEEEQAATDAPNGDLTPEMILSMMDR

Source

in vitro E.coli expression system

Target Names

CTCF

Protein Names

11-zinc finger protein CCCTC-binding factor CTCFL paralog

Expression Region

266-727aa

Notes

Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.

Tag Info

N-terminal 6xHis-tagged

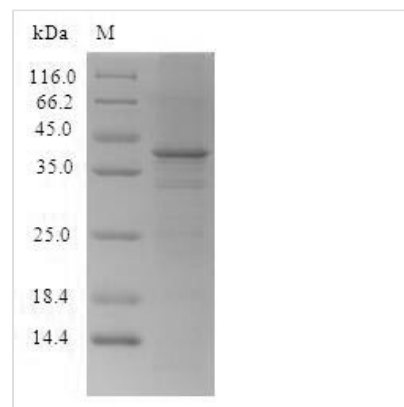
Mol. Weight

57.4kDa

Protein Length

Partial

Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

This recombinant HumanCTCF protein is an in vitro E.coli (cell-free) expressed partial protein. Its purity is 90%+ determined by SDS-PAGE. Cell-free protein expression is the in vitro synthesis of a protein using translation-compatible extracts of whole cells. In principle, whole-cell extracts contain all the macromolecules and components needed for transcription, translation, and even post-translational modification. These components include RNA polymerase, regulatory protein factors, transcription factors, ribosomes, and tRNA. When supplemented with cofactors, nucleotides, and the specific gene template, these extracts can synthesize proteins of interest in a few hours.

CTCF, best known as a transcriptional factor, is a highly conserved multifunctional DNA-binding protein with 11 zinc fingers. It plays indispensable roles in methylation maintenance, transcriptional inhibition/activation, insulation, gene imprinting, and regulation of 3D genome organization. CTCF is



responsible for the formation of genome multi-dimensions, regulation of dimensional changes, or control of central signals to transcriptional networks. CTCF has recently been found to participate in the repair of DNA double-strand breaks (DSBs) and in the maintenance of genome fidelity.

Reconstitution

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL. We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.

Shelf Life

The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.