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CTF18 siRNA (m): sc-142617

BACKGROUND

CTF18 (chromosome transmission fidelity factor 18 homolog) is a 975 amino acid protein encoded by the human gene CHTF18. CTF18 is a protein that is structurally related to the Rad24 and RFC (replication factor C) proteins. CTF18 is believed to form a novel RFC complex and functions redundantly with Rad24 in the DNA replication block checkpoint. The CTF18-RFC complex is a seven-subunit structure that consists of the four small subunits of RFC, together with CTF18, DCC1, and CTF8. This RFC complex is responsible for loading the replication clamp PCNA (Proliferating Cell Nuclear Antigen) onto DNA and functions in DNA replication and repair. Regulated unloading of PCNA during the progression and termination of DNA replication does not seem to be a function of the CTF18-RFC complex.

REFERENCES

1. Naiki, T., et al. 2001. Chl12 (Ctf18) forms a novel replication factor C-related complex and functions redundantly with Rad24 in the DNA replication checkpoint pathway. *Mol. Cell. Biol.* 21: 5838-5845.
2. Ohta, S., et al. 2002. A proteomics approach to identify proliferating cell nuclear antigen (PCNA)-binding proteins in human cell lysates. Identification of the human CHL12/RFCs2-5 complex as a novel PCNA-binding protein. *J. Biol. Chem.* 277: 40362-40367.
3. Bermudez, V.P., et al. 2003. The alternative Ctf18-Dcc1-Ctf8-replication factor C complex required for sister chromatid cohesion loads proliferating cell nuclear antigen onto DNA. *Proc. Natl. Acad. Sci. USA* 100: 10237-10242.
4. Merkle, C.J., et al. 2003. Cloning and characterization of hCTF18, hCTF8, and hDCC1. Human homologs of a *Saccharomyces cerevisiae* complex involved in sister chromatid cohesion establishment. *J. Biol. Chem.* 278: 30051-30056.
5. Kanellis, P., et al. 2003. Elg1 forms an alternative PCNA-interacting RFC complex required to maintain genome stability. *Curr. Biol.* 13: 1583-1595.
6. Ogiwara, H., et al. 2007. The INO80 chromatin remodeling complex functions in sister chromatid cohesion. *Cell Cycle* 6: 1090-1095.

CHROMOSOMAL LOCATION

Genetic locus: Chtf18 (mouse) mapping to 17 A3.3.

PRODUCT

CTF18 siRNA (m) is a pool of 2 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CTF18 shRNA Plasmid (m): sc-142617-SH and CTF18 shRNA (m) Lentiviral Particles: sc-142617-V as alternate gene silencing products.

For independent verification of CTF18 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-142617A and sc-142617B.

RESEARCH USE

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

CTF18 siRNA (m) is recommended for the inhibition of CTF18 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

CTF18 (F-1): sc-374632 is recommended as a control antibody for monitoring of CTF18 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CTF18 gene expression knockdown using RT-PCR Primer: CTF18 (m)-PR: sc-142617-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.