



CtBP1 siRNA (h): sc-35122

BACKGROUND

CtBP1 is a cellular phosphoprotein that associates with various proteins and functions as a corepressor of transcription. CtBP1 and the related protein CtBP2 are characterized as C-terminal binding protein of adenovirus E1A, and they preferentially associate with the E1A via a 5-amino acid motif, PLDLS, to repress E1A induced oncogenesis and cellular transformation. CtBP1 is expressed from embryo to adult, but CtBP2 is mainly expressed during embryogenesis. During skeletal and T-cell development, CtBP1 and CtBP2 associate with the PLDLSL domain of δ EF1, a cellular zinc finger-homeodomain protein, and thereby enhances δ EF1 induced transcriptional silencing. In addition, CtBP complexes with CtIP, a protein that recognizes distinctly different protein motifs from CtBP. CtIP binds to the BRCT repeats within the breast cancer gene BRCA1 and enables CtBP to influence BRCA1 activity. CtIP/CtBP binding to BRCA1 inhibits the transactivation of the p21 promoter, and it is critical for regulating p21 transcription in response to DNA damage.

REFERENCES

1. Sollerbrant, K., et al. 1996. The CtBP binding domain in the Adenovirus E1A protein controls CR1-dependent transactivation. *Nucleic Acids Res.* 24: 2578-2584.
2. Sekido, R., et al. 1997. Two mechanisms in the action of repressor δ EF1: binding site competition with an activator and active repression. *Genes Cells* 2: 771-783.

CHROMOSOMAL LOCATION

Genetic locus: CTBP1 (human) mapping to 4p16.3.

PRODUCT

CtBP1 siRNA (h) is a pool of 3 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 CtBP1 shRNA Plasmid (h): sc-35122-SH and CtBP1 shRNA (h) Lentiviral Particles: sc-35122-V as alternate gene silencing products.

For independent verification of CtBP1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-35122A, sc-35122B and sc-35122C.

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

CtBP1 siRNA (h) is recommended for the inhibition of CtBP1 expression in human 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

CtBP1 (G-6): sc-398945 is recommended as a control antibody for monitoring of CtBP1 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 CtBP1 gene expression knockdown using RT-PCR Primer: CtBP1 (h)-PR: sc-35122-PR (20 μ l, 527 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Purbey, P.K., et al. 2009. Acetylation-dependent interaction of SATB1 and CtBP1 mediates transcriptional repression by SATB1. *Mol. Cell. Biol.* 29: 1321-1337.
2. Gujral, T.S. and MacBeath, G. 2010. A system-wide investigation of the dynamics of Wnt signaling reveals novel phases of transcriptional regulation. *PLoS ONE* 5: e10024.
3. Zhang, X.L., et al. 2013. CtBP1 is involved in epithelial-mesenchymal transition and is a potential therapeutic target for hepatocellular carcinoma. *Oncol. Rep.* 30: 809-814.
4. Massillo, C., et al. 2019. CtBP1/CYP19A1/estradiol axis together with adipose tissue impacts over prostate cancer growth associated to metabolic syndrome. *Int. J. Cancer* 144: 1115-1127.
5. Detampel, P., et al. 2022. Caveolin-initiated macropinocytosis is required for efficient silica nanoparticles' transcytosis across the alveolar epithelial barrier. *Sci. Rep.* 12: 9474.

RESEARCH USE

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