SANTA CRUZ BIOTECHNOLOGY, INC.

CBP siRNA (h): sc-29244

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Cyclic AMP-regulated gene expression frequently involves a DNA element designated the cAMP-regulated enhancer (CRE). Many transcription factors bind to this element, including the protein CREB, which is activated as a result of phosphorylation by protein kinase A. It has been shown that protein kinase A-mediated CREB phosphorylation results in its binding to a nuclear protein designated CBP (for CREB-binding protein). These findings suggest that CBP has many of the properties expected of a CREB co-activator. Another high molecular weight transcriptional adapter protein, designated p300, is characterized by three cysteine- and histidine-rich regions, of which the most carboxy terminal region specifically binds the adenovirus E1A protein. p300 molecules lacking an intact E1A binding site bypass E1A repression, even in the presence of high concentrations of E1A. Sequence analysis of CBP and p300 has revealed substantial homology, arguing that these proteins are members of a conserved family of co-activators.

REFERENCES

1. Chivra, J.C., et al. 1993. Phosphorylated CREB binds specifically to the nuclear protein CBP. Nature 365: 855-859.
2. Kwok, R.P.S., et al. 1993. Nuclear protein CBP is a coactivator for the transcription factor CREB. Nature 370: 223-229.

CHROMOSOMAL LOCATION

Genetic locus: CREBBP (human) mapping to 16p13.3.

PRODUCT

CBP siRNA (h) is a pool of 4 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CBP shRNA Plasmid (h): sc-29244-SH and CBP shRNA (h) Lentiviral Particles: sc-29244-V as alternate gene silencing products.

For independent verification of CBP (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-29244A, sc-29244B, sc-29244C and sc-29244D.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

CBP siRNA (h) is recommended for the inhibition of CBP 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 µM in 66 µl. 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.

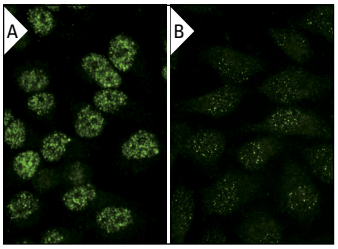
GENE EXPRESSION MONITORING

CBP (C-1): sc-7300 is recommended as a control antibody for monitoring of CBP 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CBP gene expression knockdown using RT-PCR Primer: CBP (h)-PR: sc-29244-PR (20 µl, 508 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



CBP siRNA (h): sc-29244. Immunofluorescence staining of methanol-fixed, control HeLa (**A**) and CBP siRNA silenced HeLa (**B**) cells showing diminished nuclear staining in the siRNA silenced cells. Cells probed with CBP (C-1): sc-7300.

SELECT PRODUCT CITATIONS

1. Chang, C.W., et al. 2005. Stimulation of GCMa transcriptional activity by cyclic AMP/protein kinase a signaling is attributed to CBP-mediated acetylation of GCMa. Mol. Cell. Biol. 25: 8401-8414.
2. Zhang, H., et al. 2020. EZH2 targeting reduces medulloblastoma growth through epigenetic reactivation of the BAI1/p53 tumor suppressor pathway. Oncogene 39: 1041-1048.
3. Huang, H., et al. 2021. The regulatory enzymes and protein substrates for the lysine β-hydroxybutyrylation pathway. Sci. Adv. 7: eabe2771.

RESEARCH USE

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