

# CRE-BPa siRNA (h): sc-45639

## BACKGROUND

The ATF/CREB family consists of a series of transcription factors that function by binding to the cAMP responsive element (CRE) palindromic octanucleotide, TGACCTCA. The best characterized members of this gene family include CREB-1, CREB-2 (also designated ATF-4), CRE-BPa, LZIP (also designated CREB-3 and Luman), CREM-2, ATF-1, ATF-2, ATF-3, ATF-5, ATF-6 and ATF-7. These transcription factors share terminal leucine zipper dimerization and basic DNA binding domains and are highly variable in their N-termini. Although each of the ATF/CREB proteins bind CREs in their homodimeric form, they can also bind as heterodimers, both within the ATF/CREB family and with members of the AP-1 transcription factor family. Protein kinase A-mediated CREB phosphorylation induces association with a nuclear protein designated CBP (CREB-binding protein), which may represent a CREB coactivator. CRE-BPa is a nuclear protein that binds DNA as a homodimer but can also form a hetero-dimer with ATF-2 or Jun.

## REFERENCES

1. Zu, Y.L., et al. 1993. Regulation of *trans*-activating capacity of CRE-BPa by phorbol ester tumor promoter TPA. *Oncogene* 8: 2749-2758.
2. Nomura, N., et al. 1993. Isolation and characterization of a novel member of the gene family encoding the cAMP response element-binding protein CRE-BP1. *J. Biol. Chem.* 268: 4259-4266.
3. Iourgenko, V., et al. 2003. Identification of a family of cAMP response element-binding protein coactivators by genome-scale functional analysis in mammalian cells. *Proc. Natl. Acad. Sci. USA* 100: 12147-12152.
4. Thiel, G., et al. 2005. Role of basic region leucine zipper transcription factors cyclic AMP response element binding protein (CREB), CREB2, activating transcription factor 2 and CAAT/enhancer binding protein  $\alpha$  in cyclic AMP response. *J. Neurochem.* 92: 321-336.
5. Sarraj, J.A., et al. 2005. Regulation of GTP cyclohydrolase I gene transcription by basic region leucine zipper transcription factors. *J. Cell. Biochem.* 96: 1003-1020.
6. Shahabi, N.A., et al. 2006.  $\delta$  opioid receptors stimulate Akt-dependent phosphorylation of c-Jun in T-cells. *J. Pharmacol. Exp. Ther.* 316: 933-939.

## CHROMOSOMAL LOCATION

Genetic locus: CREB5 (human) mapping to 7p15.1.

## PRODUCT

CRE-BPa 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CRE-BPa shRNA Plasmid (h): sc-45639-SH and CRE-BPa shRNA (h) Lentiviral Particles: sc-45639-V as alternate gene silencing products.

For independent verification of CRE-BPa (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-45639A, sc-45639B and sc-45639C.

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

## APPLICATIONS

CRE-BPa siRNA (h) is recommended for the inhibition of CRE-BPa 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  $\mu$ M in 66  $\mu$ 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

CRE-BPa (G420): sc-130435 is recommended as a control antibody for monitoring of CRE-BPa 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 CRE-BPa gene expression knockdown using RT-PCR Primer: CRE-BPa (h)-PR: sc-45639-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.