SANTA CRUZ BIOTECHNOLOGY, INC.

# CREB-1 (82B514): sc-52917

## BACKGROUND

Eukaryotic gene transcription is regulated by sequence-specific transcription factors that bind modular *cis* acting promoter and enhancer elements. The ATF/CREB transcription factor family binds the palindromic cAMP response element (CRE) octanucleotide TGACGTCA. The ATF/CREB family includes CREB-1, CREB-2 (also designated ATF-4), ATF-1, ATF-2 and ATF-3. This family of proteins contains highly divergent N-terminal domains, but share a C-terminal leucine zipper for dimerization and DNA binding. Although CREB can bind to DNA in an unphosphorylated state, it cannot activate transcription. Phospho-rylation of CREB on Ser 133 by protein kinase A facilitates its interaction with the 265 kDa CREB-binding protein (CBP) and activates the basal transcription complex. CREB functions in neoglucogenesis through interactions with the nuclear coactivator PGC-1. CREB may play a role in the pathogenesis of type II diabetes and dilated cardiomyopathy. The gene encoding CREB-1 maps to human chromosome 2q32.3-q34.

## REFERENCES


1. Montminy, M.R., et al. 1986. Identification of a cyclic-AMP-responsive element within the rat somatostatin gene. Proc. Natl. Acad. Sci. USA 83: 6682-6686.
2. Lin, Y.-S. et al. 1988. Interaction of a common cellular transcription factor, ATF, with regulatory elements in both Ela- and cyclic AMP-inducible promoters. Proc. Natl. Acad. Sci. USA 85: 3396-3400.
3. Yamamoto, K.K., et al. 1988. Phosphorylation-induced binding and transcriptional efficacy of nuclear factor CREB. Nature 334: 494-498.
4. Hai, T., et al. 1989. Transcription factor ATF cDNA clones: an extensive family of leucine zipper proteins able to selectively form DNA-binding heterodimers. Genes and Dev. 8: 2083-2090.
5. Taylor, A.K., et al. 1990. Assignment of the human gene for CREB-1 to chromosome 2q32.3-q34. Genomics 7: 416-421.
6. Kwok, R.P., et al. 1994. Nuclear protein CBP is a coactivator for the transcription factor CREB. Nature 370: 223-226.
7. Arias, J., et al. 1994. Activation of cAMP and mitogen responsive genes relies on a common nuclear factor. Nature 370: 226-229.
8. Fentzke, R.C., et al. 1998. Dilated cardiomyopathy in transgenic mice expressing a dominant-negative CREB transcription factor in the heart. J. Clin. Invest. 101: 2415-2426.
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## CHROMOSOMAL LOCATION

Genetic locus: CREB1 (human) mapping to 2q34; Creb1 (mouse) mapping to 1 C1/C5.

## SOURCE

CREB-1 (82B514) is a mouse monoclonal antibody raised against synthetic CREB-1 of human origin.

## PRODUCT

Each vial contains 100 µg $IgG_1$ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

CREB-1 (82B514) is recommended for detection of CREB-1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Suitable for use as control antibody for CREB-1 siRNA (h): sc-29281.

Molecular Weight of CREB-1: 43 kDa.

Positive Controls: Jurkat nuclear extract: sc-2132, A-431 whole cell lysate: sc-2201 or A-673 cell lysate: sc-2414.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048.

## STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

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

## PROTOCOLS

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