

# p-CREB-1 (Ser 129): sc-101662

## 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 contain 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. Phosphorylation of CREB on Ser 133 by protein kinase A facilitates its interaction with the 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 2q33.3.

## REFERENCES

1. Montminy, M.R., et al. 1986. 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 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.

## CHROMOSOMAL LOCATION

Genetic locus: CREB1 (human) mapping to 2q33.3; Creb1 (mouse) mapping to 1 C2.

## SOURCE

p-CREB-1 (Ser 129) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 129 of CREB-1 of human origin.

## PRODUCT

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

## APPLICATIONS

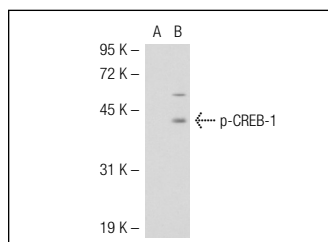
p-CREB-1 (Ser 129) is recommended for detection of Ser 129 phosphorylated CREB-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for CREB-1 siRNA (h): sc-29281, CREB-1 siRNA (m): sc-35111, CREB-1 shRNA Plasmid (h): sc-29281-SH, CREB-1 shRNA Plasmid (m): sc-35111-SH, CREB-1 shRNA (h) Lentiviral Particles: sc-29281-V and CREB-1 shRNA (m) Lentiviral Particles: sc-35111-V.

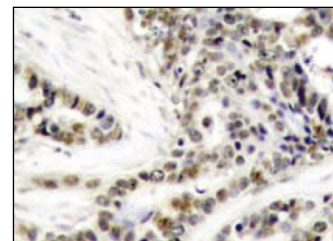
Molecular Weight of p-CREB-1: 43 kDa.

Positive Controls: 293 + UV irradiated whole cell lysate, CREB-1 (m): 293T Lysate: sc-119446 or human breast carcinoma tissue.

## DATA



p-CREB-1 (Ser 129): sc-101662. Western blot analysis of CREB-1 phosphorylation in non-transfected: sc-117752 (A) and mouse CREB-1 transfected: sc-119446 (B) 293T whole cell lysates.



p-CREB-1 (Ser 129): sc-101662. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing nuclear staining.

## SELECT PRODUCT CITATIONS

1. Wang, P., et al. 2009. POU homeodomain protein Oct-1 functions as a sensor for cyclic AMP. J. Biol. Chem. 284: 26456-26465.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.