SANTA CRUZ BIOTECHNOLOGY, INC.

p-CREB-1 (Ser 133): sc-101663

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

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

SOURCE

p-CREB-1 (Ser 133) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 133 phosphorylated 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 133) is recommended for detection of Ser 133 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 (starting dilution 1:50, dilution range 1:50-1:500) 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 siRNA (r): sc-72030, CREB-1 shRNA Plasmid (h): sc-29281-SH, CREB-1 shRNA Plasmid (m): sc-35111-SH, CREB-1 shRNA Plasmid (r): sc-72030-SH, CREB-1 shRNA (h) Lentiviral Particles: sc-29281-V, CREB-1 shRNA (m) Lentiviral Particles: sc-35111-V and CREB-1 shRNA (r) Lentiviral Particles: sc-72030-V.

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

Positive Controls: HeLa whole cell lysate: sc-2200 or CREB-1 (m): 293T Lysate: sc-119446.

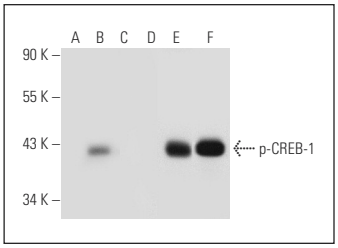
STORAGE

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

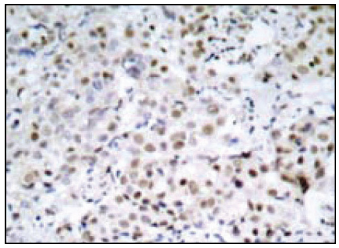
RESEARCH USE

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

DATA



Western blot analysis of CREB-1 phosphorylation in non-transfected: sc-117752 (**A**,**D**), untreated mouse CREB-1 transfected: sc-119446 (**B**,**E**) and lambda protein phosphatase (sc-200312A) treated mouse CREB-1 transfected: sc-119446 (**C**,**F**) 293T whole cell lysates. Antibodies tested include p-CREB-1 (Ser 133): sc-101663 (**A**,**B**,**C**) and CREB-1 (C-21): sc-186 (**D**,**E**,**F**).



p-CREB-1 (Ser 133): sc-101663. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing nuclear staining.

SELECT PRODUCT CITATIONS

1. Ganesh, A., et al. 2010. Role of olfactory bulb serotonin in olfactory learning in the greater short-nosed fruit bat, *Cynopterus sphinx (Chiroptera: Pteropodidae).* Brain Res. 1352: 108-117.
2. Signorelli, S., et al. 2010. Differential effects of hypoxic stress in alveolar epithelial cells and microvascular endothelial cells. Cell. Physiol. Biochem. 25: 135-144.
3. Guo, C., et al. 2010. Induction of $G_{\alpha s}$ contributes to the paradoxical stimulation of cytosolic phospholipase $A_{2\alpha}$ expression by cortisol in human amnion fibroblasts. Mol. Endocrinol. 24: 1052-1061.
4. Kim, Y.M., et al. 2010. The HTLV-1 tax protein cooperates with phosphorylated CREB, TORC2 and p300 to activate CRE-dependent cyclin D1 transcription. Oncogene 29: 2142-2152.
5. Barresi, V., et al. 2015. p-CREB expression in human meningiomas: correlation with angiogenesis and recurrence risk. J. Neurooncol. 122: 87-95.
6. Xu, Q., et al. 2015. Sigma 1 receptor activation regulates brain-derived neurotrophic factor through NR2A-CaMKIV-TORC1 pathway to rescue the impairment of learning and memory induced by brain ischaemia/reperfusion. Psychopharmacology 232: 1779-1791.
7. Ragu Varman, D. and Rajan, K.E. 2015. Environmental enrichment reduces anxiety by differentially activating serotonergic and neuropeptide Y (NPY)-ergic system in Indian field mouse *(Mus booduga):* an animal model of post-traumatic stress disorder. PLoS ONE 10: e0127945.
8. Mukilan, M., et al. 2015. Activity-dependent expression of miR-132 regulates immediate-early gene induction during olfactory learning in the greater short-nosed fruit bat, *Cynopterus sphinx*. Neurobiol. Learn Mem. 120: 41-51.

PROTOCOLS

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