SANTA CRUZ BIOTECHNOLOGY, INC.

CREB-1 (D-12): sc-377154

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 contains highly divergent N-terminal domains, but shares 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.

SOURCE

CREB-1 (D-12) is a mouse monoclonal antibody raised against amino acids 254-327 of CREB-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-377154 X, 200 µg/0.1 ml.

CREB-1 (D-12) is available conjugated to agarose (sc-377154 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377154 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377154 PE), fluorescein (sc-377154 FITC), Alexa Fluor® 488 (sc-377154 AF488), Alexa Fluor® 546 (sc-377154 AF546), Alexa Fluor® 594 (sc-377154 AF594) or Alexa Fluor® 647 (sc-377154 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377154 AF680) or Alexa Fluor® 790 (sc-377154 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

CREB-1 (D-12) is recommended for detection of CREB-1A, CREB-1B, CREM and ATF-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

CREB-1 (D-12) is also recommended for detection of CREB-1A, CREB-1B, CREM and ATF-1 in additional species, including equine, canine, bovine, porcine and avian.

CREB-1 (D-12) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

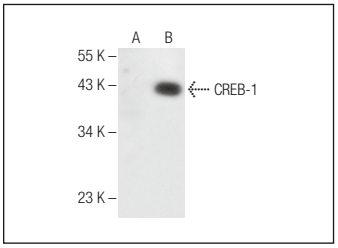
Molecular Weight of CREB-1: 43 kDa.

Positive Controls: Jurkat nuclear extract: sc-2132, A-431 whole cell lysate: sc-2201 or CREB-1 (m): 293T Lysate: sc-119446.

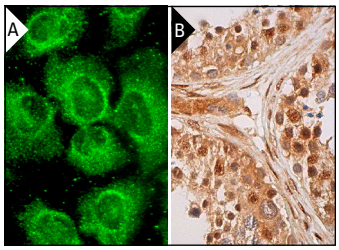
STORAGE

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

DATA



CREB-1 (D-12): sc-377154. Western blot analysis of CREB-1 expression in non-transfected: sc-117752 (**A**) and mouse CREB-1 transfected: sc-119446 (**B**) 293T whole cell lysates.



CREB-1 (D-12): sc-377154. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear and cytoplasmic staining of cells in seminiferous ducts and Leydig cells (**B**).

SELECT PRODUCT CITATIONS

1. Haidar, M., et al. 2015. Transforming growth factor β2 promotes transcription of COX2 and EP4, leading to a prostaglandin E_2-driven autostimulatory loop that enhances virulence of *Theileria annulata*-transformed macrophages. Infect. Immun. 83: 1869-1880.
2. Makani, V., et al. 2016. BBB-permeable, neuroprotective, and neurotrophic polysaccharide, midi-GAGR. PLoS ONE 11: e0149715.
3. Wei, D.W., et al. 2017. Characterization of the promoter region of the bovine SIX1 gene: roles of MyoD, PAX7, CREB and MyoG. Sci. Rep. 7: 12599.
4. Xu, X., et al. 2018. Liraglutide regulates the viability of pancreatic α-cells and pancreatic β-cells through cAMP-PKA signal pathway. Life Sci. 195: 87-94.
5. Aizawa, S., et al. 2019. Adenosine stimulates neuromedin U mRNA expression in the rat pars tuberalis. Mol. Cell. Endocrinol. 496: 110518.
6. Elzaiat, M., et al. 2019. High-throughput exploration of the network dependent on AKT1 in mouse ovarian granulosa cells. Mol. Cell. Proteomics 18: 1307-1319.
7. Fernandes, C.E.M., et al. 2019. Systemic injection of an H4 receptor agonist induces a decrease in CREB and pCREB levels in the cerebellar vermis and prefrontal cortex in mice. Braz. J. Med. Biol. Res. 52: e8334.
8. Daniele, S., et al. 2019. Long lasting inhibition of Mdm2-p53 interaction potentiates mesenchymal stem cell differentiation into osteoblasts. Biochim. Biophys. Acta Mol. Cell Res. 1866: 737-749.
9. Adamo, A.M., et al. 2019. Early developmental marginal zinc deficiency affects neurogenesis decreasing neuronal number and altering neuronal specification in the adult rat brain. Front. Cell. Neurosci. 13: 62.

RESEARCH USE

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