

ATF-4 (B-3): sc-390063

BACKGROUND

Eukaryotic gene transcription is regulated by sequence-specific transcription factors which bind modular *cis* acting promoter and enhancer elements. The cAMP response element (CRE), one of the best studied of such elements, consists of the palindromic octanucleotide TGACGTCA. Several CRE binding proteins have been identified within the ATF/CREB family, the best characterized of which include CREB-1, CREB-2 (also designated ATF-4), ATF-1, ATF-2 and ATF-3. These proteins share highly related COOH terminal leucine zipper dimerization and basic DNA binding domains but are highly divergent in their amino terminal domains. Although each of the ATF/CREB proteins appear capable of binding CRE in its homodimeric form, certain of these also bind as heterodimers, both within the ATF/CREB family and even with members of the AP-1 transcription factor family.

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: 3396-4000.
3. Hoeffler, J.P., et al. 1988. Cyclic AMP-responsive DNA-binding protein: structure based on a cloned placental cDNA. *Science* 242: 1430-1433.

CHROMOSOMAL LOCATION

Genetic locus: ATF4 (human) mapping to 22q13.1; Atf4 (mouse) mapping to 15 E1.

SOURCE

ATF-4 (B-3) is a mouse monoclonal antibody raised against amino acids 1-290 of ATF-4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} 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-390063 X, 200 µg/0.1 ml.

ATF-4 (B-3) is available conjugated to agarose (sc-390063 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390063 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390063 PE), fluorescein (sc-390063 FITC), Alexa Fluor® 488 (sc-390063 AF488), Alexa Fluor® 546 (sc-390063 AF546), Alexa Fluor® 594 (sc-390063 AF594) or Alexa Fluor® 647 (sc-390063 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390063 AF680) or Alexa Fluor® 790 (sc-390063 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

ATF-4 (B-3) is recommended for detection of ATF-4 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).

Suitable for use as control antibody for ATF-4 siRNA (h): sc-35112, ATF-4 siRNA (m): sc-35113, ATF-4 shRNA Plasmid (h): sc-35112-SH, ATF-4 shRNA Plasmid (m): sc-35113-SH, ATF-4 shRNA (h) Lentiviral Particles: sc-35112-V and ATF-4 shRNA (m) Lentiviral Particles: sc-35113-V.

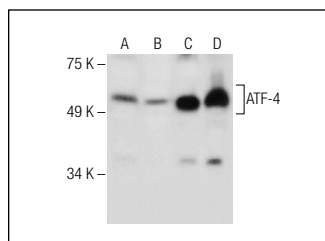
ATF-4 (B-3) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight (predicted) of ATF-4: 38 kDa.

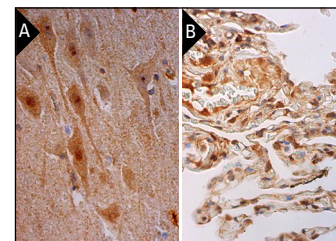
Molecular Weight (observed) of ATF-4: 40/50 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, Jurkat whole cell lysate: sc-2204 or Jurkat nuclear extract: sc-2132.

DATA



ATF-4 (B-3): sc-390063. Western blot analysis of ATF-4 expression in K-562 (A) and Jurkat (B) whole cell lysates and K-562 (C) and Jurkat (D) nuclear extracts.



ATF-4 (B-3): sc-390063. Immunoperoxidase staining of formalin fixed, paraffin-embedded human hippocampus tissue showing nuclear and cytoplasmic staining of neuronal cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lung tissue showing nuclear and cytoplasmic staining of pneumocytes and macrophages (B).

SELECT PRODUCT CITATIONS

1. Chang, J., et al. 2015. Molecular mechanisms of Polyphyllin I-induced apoptosis and reversal of the epithelial-mesenchymal transition in human osteosarcoma cells. *J. Ethnopharmacol.* 170: 117-127.
2. Böhme, I. and Bosserhoff, A. 2020. Extracellular acidosis triggers a senescence-like phenotype in human melanoma cells. *Pigment Cell Melanoma Res.* 33: 41-51.
3. Wen, X., et al. 2021. Obesity-associated up-regulation of lipocalin 2 protects gastric mucosa cells from apoptotic cell death by reducing endoplasmic reticulum stress. *Cell Death Dis.* 12: 221.

RESEARCH USE

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