

ATF-1 (C41-5.1): sc-243

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. ATF-1 is shown to play a key role in the induction of NOX1, this protein binds the cAMP response element (CRE) and mediates PKA-induced stimulation of CRE-reporter genes. ATF-2 forms homodimers and heterodimers with c-Jun to initiate CRE-dependent transcription. Phosphorylation of ATF-2 at Thr 69 and Thr 71 by stress-activated kinases is necessary for transcriptional activation. Myc also induces phosphorylation of ATF-2 at Thr 69 and Thr 71 to prolong the half-life of ATF-2. ATF-2 functions as a histone acetyltransferase (HAT) and acetylates Histones H2B and H4 specifically *in vitro*.

CHROMOSOMAL LOCATION

Genetic locus: ATF1 (human) mapping to 12q13.12; Atf1 (mouse) mapping to 15 F1.

SOURCE

ATF-1 (C41-5.1) is a mouse monoclonal antibody raised against recombinant ATF-1 of human origin.

PRODUCT

Each vial contains 200 µg IgA 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-243 X, 200 µg/0.1 ml.

APPLICATIONS

ATF-1 (C41-5.1) is recommended for detection of ATF-1 p35 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for ATF-1 siRNA (h): sc-29754, ATF-1 siRNA (m): sc-29755, ATF-1 shRNA Plasmid (h): sc-29754-SH, ATF-1 shRNA Plasmid (m): sc-29755-SH, ATF-1 shRNA (h) Lentiviral Particles: sc-29754-V and ATF-1 shRNA (m) Lentiviral Particles: sc-29755-V.

ATF-1 (C41-5.1) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of ATF-1: 35 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, F9 cell lysate: sc-2245 or K-562 nuclear extract: sc-2130.

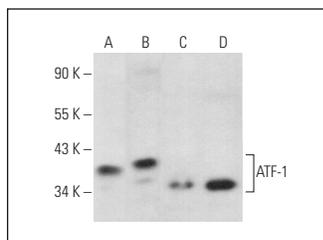
STORAGE

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

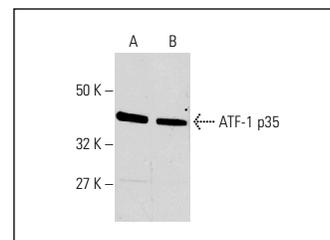
RESEARCH USE

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

DATA



ATF-1 (C41-5.1): sc-243. Western blot analysis of ATF-1 expression in HeLa (A) and F9 (B) whole cell lysates and NIH/3T3 (C) and K-562 (D) nuclear extracts.



ATF-1 (C41-5.1): sc-243. Western blot analysis of ATF-1 p35 expression in A-431 cells at antibody dilutions of 1.0 µg/ml (A) and 0.1 µg/ml (B).

SELECT PRODUCT CITATIONS

- Nakamura, T., et al. 1995. Down-regulation of the cyclin A promoter in differentiating human embryonal carcinoma cells is mediated by depletion of ATF-1 and ATF-2 in the complex at the ATF/CRE site. *Exp. Cell Res.* 216: 422-430.
- Kobayashi, M. and Kawakami, K. 1995. ATF-1/CREB heterodimer is involved in constitutive expression of the housekeeping Na,K-ATPase α 1 subunit gene. *Nucleic Acids Res.* 23: 2848-2855.
- Ghosh, S., et al. 2009. IKK β mediates cell shape-induced aromatase expression and estrogen biosynthesis in adipose stromal cells. *Mol. Endocrinol.* 23: 662-670.
- Hailemariam, K., et al. 2010. Transcriptional regulation of ferritin and antioxidant genes by HIPK2 under genotoxic stress. *J. Cell Sci.* 123: 3863-3871.
- Pierard, V., et al. 2010. DNA cytosine methylation in the bovine leukemia virus promoter is associated with latency in a lymphoma-derived B-cell line: potential involvement of direct inhibition of cAMP-responsive element (CRE)-binding protein/CRE modulator/activation transcription factor binding. *J. Biol. Chem.* 285: 19434-19449.
- Schindler, M., et al. 2013. cAMP-responsive element binding protein: a vital link in embryonic hormonal adaptation. *Endocrinology* 154: 2208-2221.
- Mayer, T.Z., et al. 2013. The p38-MSK1 signaling cascade influences cytokine production through CREB and C/EBP factors in human neutrophils. *J. Immunol.* 191: 4299-4307.
- Takii, R., et al. 2015. ATF1 modulates the heat shock response by regulating the stress-inducible heat shock factor 1 transcription complex. *Mol. Cell. Biol.* 35: 11-25.



See **ATF-1 (25C10G): sc-270** for ATF-1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.