SANTA CRUZ BIOTECHNOLOGY, INC.

ATF-1 (ATF1 2A9/8): sc-53172

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. 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 phospho-rylation 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.*

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: 3396-3400.
3. 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.
4. Diep, A., et al. 1991. Assignment of the gene for cyclic AMP-response element binding protein 2 (CREB2) to human chromosome 2q24.1-q32. Genomics 11: 1161-1163.
5. Van Dam, H., et al. 1993. Heterodimer formation of cJun and ATF-2 is responsible for induction of c-Jun by the 243 amino acid adenovirus E1A protein. EMBO J. 12: 479-487.
6. Van Dam, H., et al. 1995. ATF-2 is preferentially activated by stress-activated protein kinases to mediate c-Jun induction in response to genotoxic agents. EMBO J. 14: 1798-1811.
7. Wilkinson, M.G., et al. 1996. The ATF-1 transcription factor is a target for the Sty1 stress-activated MAP kinase pathway in fission yeast. Genes Dev. 10: 2289-2301.

CHROMOSOMAL LOCATION

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

SOURCE

ATF-1 (ATF1 2A9/8) is a mouse monoclonal antibody raised against recombinant ATF-1 of *S. pombe* 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.

APPLICATIONS

ATF-1 (2A9/8) is recommended for detection of ATF-1 of mouse, rat, human and *S. pombe* 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.

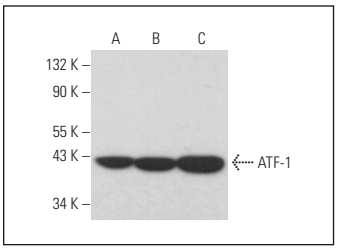
Molecular Weight of ATF-1: 35 kDa.

Positive Controls: F9 cell lysate: sc-2245, KNRK nuclear extract: sc-2141 or SK-N-MC cell lysate: sc-2237.

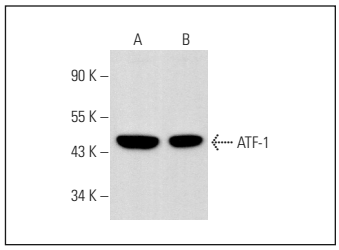
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



ATF-1 (ATF1 2A9/8): sc-53172. Western blot analysis of ATF-1 expression in F9 (**A**), SK-N-MC (**B**) and NTERA-2 cl.D1 (**C**) whole cell lysates.



ATF-1 (ATF1 2A9/8): sc-53172. Western blot analysis of ATF-1 expression in F9 whole cell lysate (**A**) and KNRK nuclear extract (**B**).

SELECT PRODUCT CITATIONS

1. Lorenz, D.R., et al. 2014. Heterochromatin assembly and transcriptome repression by Set1 in coordination with a class II histone deacetylase. Elife 3: e04506.

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.

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.