

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

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 TGACGTC. 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 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*.

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.

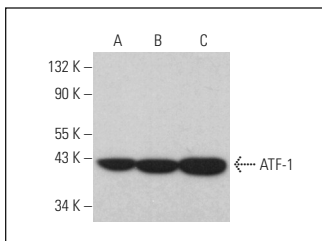
Molecular Weight of ATF-1: 35 kDa.

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

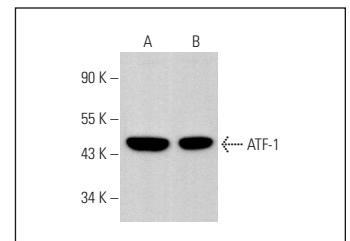
RECOMMENDED SUPPORT REAGENTS

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, Alexa Fluor® 488 and Alexa Fluor® 647.