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ATF-2 (m): 293T Lysate: sc-126459

BACKGROUND

Eukaryotic gene transcription is regulated by sequence-specific transcription factors which 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 phosphorylation of ATF-2 at Thr 69 and Thr 71 to prolong the half-life of ATF-2. ATF-2 also functions as a histone acetyltransferase (HAT) by specifically acetylating Histones H2B and H4 *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. and Green, M.R. 1988. Interaction of a common cellular transcription factor, ATF, with regulatory elements in both E1A- 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 c-Jun 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. Kawasaki, H., et al. 2000. ATF-2 has intrinsic histone acetyltransferase activity which is modulated by phosphorylation. *Nature* 405: 195-200.
8. Miethe, J., et al. 2001. Crosstalk between Myc and activating transcription factor-2 (ATF-2): Myc prolongs the half-life and induces phosphorylation of ATF-2. *Oncogene* 20: 8116-8124.

CHROMOSOMAL LOCATION

Genetic locus: *Atf2* (mouse) mapping to 2 C3.

PRODUCT

ATF-2 (m): 293T Lysate represents a lysate of mouse ATF-2 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

RESEARCH USE

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

APPLICATIONS

ATF-2 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive ATF-2 antibodies. Recommended use: 10-20 µl per lane.

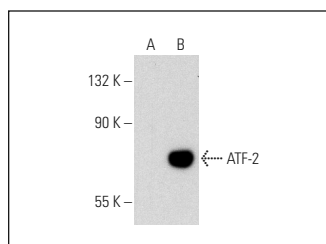
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

ATF-2 (F2BR-1): sc-242 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse ATF-2 expression in ATF-2 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

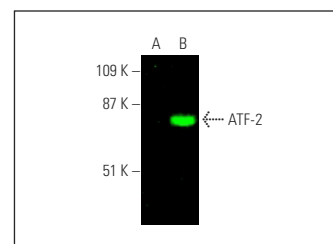
RECOMMENDED SUPPORT REAGENTS

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.

DATA



ATF-2 (F2BR-1): sc-242. Western blot analysis of ATF-2 expression in non-transfected: sc-117752 (A) and mouse ATF-2 transfected: sc-126459 (B) 293T whole cell lysates.



ATF-2 (F2BR-1): sc-242. Near-infrared western blot analysis of ATF-2 expression in non-transfected: sc-117752 (A) and mouse ATF-2 transfected: sc-126459 (B) 293T whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.