SANTA CRUZ BIOTECHNOLOGY, INC.

p-ATF-2 (Thr 71): sc-7982

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

BACKGROUND

Eukaryotic gene transcription is regulated by sequence-specific transcription factors which bind modular *cis*-acting promotor 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*.

CHROMOSOMAL LOCATION

Genetic locus: ATF2 (human) mapping to 2q31.1; Atf2 (mouse) mapping to 2 C3.

SOURCE

p-ATF-2 (Thr 71) is available as either goat (sc-7982) or rabbit (sc-7982-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Thr 71 phosphorylated ATF-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7982 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-7982 X, 200 µg/0.1 ml.

APPLICATIONS

p-ATF-2 (Thr 71) is recommended for detection of Thr 71 phosphorylated ATF-2 of mouse, rat, human and *Xenopus* origin by Western Blotting (starting dilution 1:200, 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).

p-ATF-2 (Thr 71) is also recommended for detection of correspondingly phosphorylated ATF-2 in additional species, including equine, bovine, porcine and avian.

Suitable for use as control antibody for ATF-2 siRNA (h): sc-29205, ATF-2 siRNA (m): sc-29756, ATF-2 shRNA Plasmid (h): sc-29205-SH, ATF-2 shRNA Plasmid (m): sc-29756-SH, ATF-2 shRNA (h) Lentiviral Particles: sc-29205-V and ATF-2 shRNA (m) Lentiviral Particles: sc-29756-V.

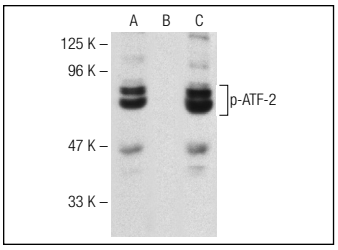
p-ATF-2 (Thr 71) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of p-ATF-2: 70 kDa.

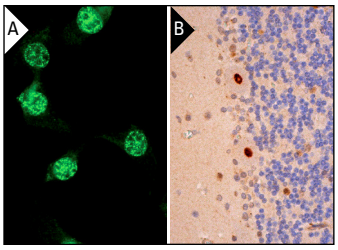
STORAGE

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

DATA



p-ATF-2 (Thr 71)-R: sc-7982-R. Western blot analysis of ATF-2 phosphorylation in anisomycin-treated NIH/3T3 cells (**A**-**C**). Antibody was preincubated with either the cognate phosphopeptide (**B**) or unphosphorylated peptide (**C**).



p-ATF-2 (Thr 71)-R: sc-7982-R. Immunofluorescence staining of methanol-fixed, anisomycin-treated NIH/3T3 cells showing nuclear staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing nuclear staining of Purkinje cells and subset of cells in granular layer (**B**).

SELECT PRODUCT CITATIONS

1. Wen-Sheng, W. 2003. ERK signaling pathway is involved in $p15^{INK4b}$/$p16^{INK4a}$ expression and Hep G2 growth inhibition triggered by TPA and saikosaponin α. Oncogene 22: 955-963.
2. Murata, T., et al. 2008. Phosphorylation of two eukaryotic transcription factors, Jun dimerization protein 2 and activation transcription factor 2, in *Escherichia coli* by Jun N-terminal kinase 1. Anal. Biochem. 376: 115-121.
3. Fosbrink, M., et al. 2010. Visualization of JNK activity dynamics with a genetically encoded fluorescent biosensor. Proc. Natl. Acad. Sci. USA 107: 5459-5464.
4. Feng, A.W., et al. 2012. Berberine ameliorates COX-2 expression in rat small intestinal mucosa partially through PPARγ pathway during acute endotoxemia. Int. Immunopharmacol. 12: 182-188.
5. Chen, Y.J. and Chang, L.S. 2012. Gallic acid downregulates matrix metalloproteinase-2 (MMP-2) and MMP-9 in human leukemia cells with expressed Bcr/Abl. Mol. Nutr. Food Res. 56: 1398-1412.
6. Lindaman, L.L., et al. 2013. Phosphorylation of ATF2 and interaction with NFY induces c-Jun in the gonadotrope. Mol. Cell. Endocrinol. 365: 316-326.
7. Namachivayam, K., et al. 2015. All-*trans* retinoic acid induces TGF-β2 in intestinal epithelial cells via RhoA- and p38α MAPK-mediated activation of the transcription factor ATF2. PLoS ONE 10: e0134003.

RESEARCH USE

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