

# ATF-3 (44C3a): sc-81189



The Power to Question

## BACKGROUND

Eukaryotic gene transcription is regulated by sequence-specific transcription factors which bind modular *cis*-acting promoter and enhancer elements. The cAMP response element (CRE), one of the best studied of such elements, consists of the palindromic octanucleotide TGACGTCA. Several CRE binding proteins have been identified within the ATF/CREB family, the best characterized of which include CREB-1, CREB-2 (also designated ATF-4), ATF-1, ATF-2 and ATF-3. These proteins share highly related COOH-terminal leucine zipper dimerization and basic DNA binding domains but are highly divergent in their amino-terminal domains. Although each of the ATF/CREB proteins appear capable of binding CRE in its homodimeric form, certain of these also bind as heterodimers, both within the ATF/CREB family and even with members of the AP-1 transcription factor family.

## 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 Ela- and cyclic AMP-inducible promoters. *Proc. Natl. Acad. Sci. USA* 85: 3396-3400.
3. Hoeffler, J.P., et al. 1988. Cyclic AMP-responsive DNA-binding protein: structure based on a cloned placental cDNA. *Science* 242: 1430-1433.

## CHROMOSOMAL LOCATION

Genetic locus: ATF3 (human) mapping to 1q32.3.

## SOURCE

ATF-3 (44C3a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to an internal region of ATF-3 of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 1.0% stabilizer protein.

## APPLICATIONS

ATF-3 (44C3a) is recommended for detection of ATF-3 of human and rat 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for ATF-3 siRNA (h): sc-29757, ATF-3 siRNA (r): sc-72029, ATF-3 shRNA Plasmid (h): sc-29757-SH, ATF-3 shRNA Plasmid (r): sc-72029-SH, ATF-3 shRNA (h) Lentiviral Particles: sc-29757-V and ATF-3 shRNA (r) Lentiviral Particles: sc-72029-V.

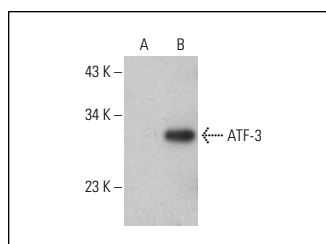
Molecular Weight of ATF-3: 21 kDa.

Positive Controls: mouse ATF-3 transfected HEK293T whole cell lysates.

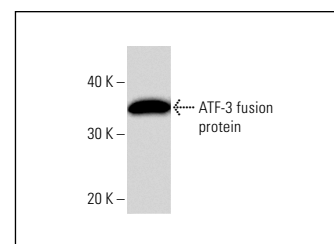
## STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

## DATA



ATF-3 (44C3a): sc-81189. Western blot analysis of ATF-3 expression in non-transfected (A) and mouse ATF-3 transfected (B) HEK293T whole cell lysates.



ATF-3 (44C3a): sc-81189. Western blot analysis of human recombinant ATF-3 fusion protein.

## SELECT PRODUCT CITATIONS

1. Schindler, M., et al. 2013. cAMP-responsive element binding protein: a vital link in embryonic hormonal adaptation. *Endocrinology* 154: 2208-2221.
2. Yan, J., et al. 2014. Usp9x- and Noxa-mediated Mcl-1 downregulation contributes to pemetrexed-induced apoptosis in human non-small-cell lung cancer cells. *Cell Death Dis.* 5: e1316.
3. Sha, H., et al. 2017. ATF3 promotes migration and M1/M2 polarization of macrophages by activating tenascin-C via Wnt/β-catenin pathway. *Mol. Med. Rep.* 16: 3641-3647.
4. Du, A., et al. 2018. NDRG1 downregulates ATF3 and inhibits cisplatin-induced cytotoxicity in lung cancer A549 cells. *Int. J. Med. Sci.* 15: 1502-1507.
5. Nguyen, T.H., et al. 2019. Fenretinide via NOXA induction, enhanced activity of the BCL-2 inhibitor venetoclax in high Bcl-2-expressing neuroblastoma preclinical models. *Mol. Cancer Ther.* 18: 2270-2282.
6. Hamada, Y., et al. 2020. Nanosecond pulsed electric fields induce the integrated stress response via reactive oxygen species-mediated heme-regulated inhibitor (HRI) activation. *PLoS ONE* 15: e0229948.
7. Losurdo, M., et al. 2020. Diffuse axonal injury in the rat brain: axonal injury and oligodendrocyte activity following rotational injury. *Brain Sci.* 10: 229.
8. Mishra, R., et al. 2020. Dengue virus degrades USP33-ATF3 axis via extracellular vesicles to activate human microglial cells. *J. Immunol.* 205: 1787-1798.
9. Ratna, A., et al. 2021. Myeloid endoplasmic reticulum resident chaperone GP96 facilitates inflammation and steatosis in alcohol-associated liver disease. *Hepatol. Commun.* 5: 1165-1182.

## RESEARCH USE

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