Anti-Phospho-Thr^{490,498} Activating Transcription Factor 2 (ATF2) Antibody

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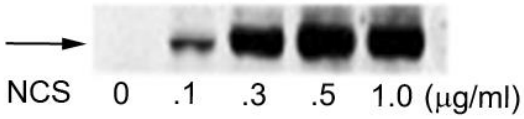
Catalog #: p115-4908 **Size:** 100 µl

Cite this Antibody: PhosphoSolutions Cat# p115-4908, RRID:AB_2492044

Host	Applications	Species Tested	Species Reactivity*	Molecular Weight
Rabbit	WB 1:1000 ICC 1:500 IHC 1:1000 (frozen sections)	H, M	R	~74 kDa

Product Description: Affinity purified rabbit polyclonal antibody.

Biological Significance: The activating transcription factor ATF2 (also called CRE-BP1) binds to both AP-1 and CRE DNA response elements and is a member of the ATF/CREB family of leucine zipper proteins (Maekawa et al., 1989). ATF2 has been implicated in the transcriptional regulation of a number of genes including cytokines, cell cycle control and apoptosis. Various forms of cellular stress, including inflammatory cytokines and UV irradiation, stimulate the transcriptional activity of ATF2 (Ivanov et al., 2003; Morton et al., 2004). Stress induced ATF-dependent transcription is dependent on phosphorylation of ATF (Fuchs et al., 2000); Morton et al., 2004). Serine 490 and serine 498 are novel phosphorylation sites on ATF that have recently been identified. ATF2 is particularly abundant in the brain and the ATF2 family of transcription factors is considered an important substrate of signals upstream of the activation of genes associated with neuronal growth and differentiation (Karin and Hunter, 1995). ATF expression has also been linked to the depression in humans (Laifenfeld et al., 2004).



Western blot of human melanoma cells incubated with varying doses of the radiomimetic drug NCS showing specific immunolabeling of the ~74 kDa ATF2 protein phosphorylated at Ser^{490} and Ser^{498}.

Antigen: Phosphopeptide corresponding to amino acid residues surrounding the phospho-Thr^{490,498} of human ATF2.

Antibody Specificity: Specific for endogenous levels of the ~74 kDa ATF2 protein phosphorylated at Ser^{490,498}. The antibody also recognizes the phosphorylated ~54 kDa splice form of ATF2.

Purification Method: Prepared from rabbit serum by affinity purification via sequential chromatography on phospho and non-phosphopeptide affinity columns.

Quality Control Tests: Western blots performed on each lot.

Packaging: 100 µl in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg BSA per ml and 50% glycerol.

Storage and Stability: Shipped on blue ice. Storage at -20°C is recommended, as aliquots may be taken without freeze/thawing due to presence of 50% glycerol. Stable for at least 1 year at -20°C.

Application Key: **WB** = Western Blot **IF** = Immunofluorescence **IHC** = Immunohistochemistry **IP** = Immunoprecipitation
Species Reactivity Key: **All**-All Species **A**-Avian **Amp**-Amphibian **Ar**-*Arabidopsis* **B**-Bovine **C**-Canine **Ch**-Chicken **D**-*Drosophila* **GP**-Guinea Pig **H**-Human **Ha**-Hamster **M**-Mouse **NHP**- Non-human primate **P**-Pig **R**-Rat **S**-Sheep **X**-*Xenopus* **Z**-Zebrafish
*Species assumed based on 100% homology with sequence used as antigen **For Research Use Only**

Product Specific References:

Muñoz, Denise P., Misako Kawahara, and Steven M. Yannone. "An autonomous chromatin/DNA-PK mechanism for localized DNA damage signaling in mammalian cells." *Nucleic acids research* 41.5 (2013): 2894-2906.

Bhoumik A, Takahashi S, Breitweiser W, Shiloh Y, Jones N, Ronai Z (2005) ATM-dependent phosphorylation of ATF2 is required for DNA damage response. *Mol Cell* May 27; 18(5):577-87.

General References:

Fuchs SY, Tappin I, Ronai Z (2000) Stability of the ATF2 transcription factor is regulated by phosphorylation and dephosphorylation. J Biol Chem 275:12560-12564.

Ivanov VN, Bhoumik A, Ronai Z (2003) Death receptors and melanoma resistance to apoptosis. Oncogene 22:3152-3161.

Karin M, Hunter T (1995) Transcriptional control by protein phosphorylation: Signal transmission from the cell surface to the nucleus. Curr Biol 5:747-757.

Laifenfeld D, Karry R, Grauer E, Klein E, Ben-Shachar D (2004) ATF2, a member of the CREB/ATF family of transcription factors, in chronic stress and consequent to antidepressant treatment: animal models and human post-mortem brains. Neuropsychopharmacology 29:589-597.

Maekawa T, Sakura H, Kanei-Ishii C, Sudo T, Yoshimura T, Fujisawa J, Yoshida M, Ishii S (1989) Leucine zipper structure of the protein CRE-BP1 binding to the cyclic AMP response element in brain. EMBO J 8:2023-2028.

Morton S, Davis RJ, Cohen P (2004) Signalling pathways involved in multisite phosphorylation of the transcription factor ATF2. FEBS Lett 572:177-183.

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