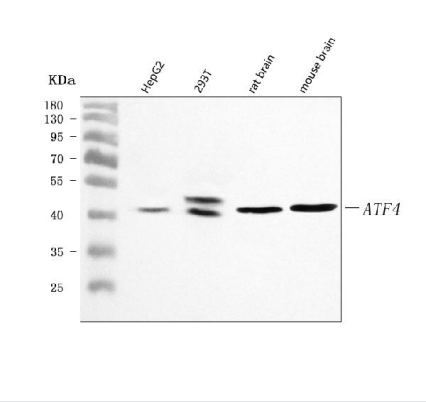
ATF4 Antibody – Rabbit Polyclonal

PRODUCT OVERVIEW

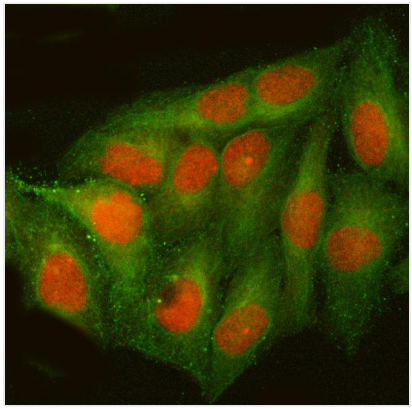
Product Name	ATF4, Polyclonal Antibody
Full Product Name	Anti-ATF4 Antibody Picoband
Product Gene Name	anti-ATF4 antibody
Product Synonym Names	Cyclic AMP-dependent transcription factor ATF-4; activating transcription factor 4 (tax-responsive enhancer element B67); Cyclic AMP-dependent transcription factor ATF-4; cAMP-dependent transcription factor ATF-4; Activating transcription factor 4; Cyclic AMP-responsive element-binding protein 2; CREB-2; cAMP-responsive element-binding protein 2; DNA-binding protein TAXREB67; Tax-responsive enhancer element-binding protein 67; TaxREB67; ATF4; CREB2; TXREB
Clonality	Polyclonal
Isotype	Rabbit IgG
Host	Rabbit
Species Reactivity	Human, Mouse, Rat
Form/Format	Lyophilized. Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
Purity/Purification	Immunogen affinity purified.
Specificity	Expressed in the liver, retina, bone cells and airway epithelial cells of the lung. NotExpressed in the platelets.
Preparation and Storage	At -20 degree C for one year from date of receipt. After reconstitution, at 4 degree C for one month. It can also be aliquotted and stored frozen at -20 degree C for six months.Avoid repeated freezing and thawing.
Molecular Weight	40 kDa
Chromosome Location	Chromosome: 22; NC_000022.10 (39916569..39918691). Location: 22q13.1
OMIM	604064
3D Structure	ModBase 3D Structure for P18848
Immunogen	E coli-derived human ATF4 recombinant protein (Position: E10-E210).
Subcellular Localization	Cytoplasm
Reconstitution	Adding 0.2 ml of distilled water will yield a concentration of 500ug/ml.
Cross Reactivity	No cross-reactivity with other proteins.
Protein Function	Transcriptional activator. Binds the cAMP response element (CRE)(consensus: 5'-GTGACGT[AC][AG]-3'), a sequence present in many viral and cellular promoters. Cooperates with FOXO1 in osteoblasts to regulate glucose homeostasis through suppression of beta-cell production and decrease in insulin production (By similarity). It binds to a Tax-responsive enhancer element in the long terminal repeat of HTLV-I. Regulates the induction of DDIT3/CHOP and asparagine synthetase (ASNS) in response to endoplasmic reticulum (ER) stress. In concert with DDIT3/CHOP, activates the transcription of TRIB3 and promotes ER stress-induced neuronal apoptosis by regulating the transcriptional induction of BBC3/PUMA. Activates transcription of SIRT4. Regulates the circadian expression of the core clock component PER2 and the serotonin transporter SLC6A4. Binds in a circadian time-dependent manner to the cAMP response elements (CRE) in the SLC6A4 and PER2 promoters and periodically activates the transcription of these genes. During ER stress response, activates the transcription of NLRP1, possibly in concert with other factors (PubMed:26086088).
Product Categories/Family for anti-ATF4 antibody	Primary Antibodies; Domain Families; Epigenetics and Nuclear Signaling; Hlh/Leucine Zipper; Transcription
ISO Certification	Manufactured in an ISO 13485:2003 and EN ISO 13485:2012 Certified Laboratory.

Applications Tested/Suitable for anti-ATF4 antibody	Western Blot (WB), Immunocytochemistry (ICC), Immunofluorescence (IF), Flow Cytometry (FC/FACS), ELISA (EIA)
Application Notes for anti-ATF4 antibody	WB: 0.25-0.5ug/ml, Human, Mouse, Rat ICC/IF: 5ug/ml, Human FC/FACS (Fixed): 1-3ug/1x1x10^6 cells, Human ELISA: 0.1-0.5ug/ml
Related Product Information for anti-ATF4 antibody	The brand Picoband indicates this is a premium antibody that guarantees superior quality, high affinity, and strong signals with minimal background in Western blot applications. Only our best-performing antibodies are designated as Picoband, ensuring unmatched performance.
Product References and Citations for anti-ATF4 antibody	1. De Angelis, R., Iezzi, S., Bruno, T., Corbi, N., Di Padova, M., Floridi, A., Fanciulli, M., Passananti, C.Functional interaction of the subunit 3 of RNA polymerase II (RPB3) with transcription factor-4 (ATF4).FEBS Lett. 547: 15-19, 2003.2. Hai, T., Liu, F., Coukos, W. J., Green, M. R.Transcription factor ATF cDNA clones: an extensive family of leucine zipper proteins able to selectively form DNA-binding heterodimers.Genes Dev. 3: 2083-2090, 1989.3. Karpinski, B. A., Morle, G. D., Huggenvik, J., Uhler, M. D., Leiden, J. M.Molecular cloning of human CREB-2: an ATF/CREB transcription factor that can negatively regulate transcription from the cAMP response element.Proc. Nat. Acad. Sci. 89: 4820-4824, 1992.
Other Notes	Small volumes of anti-ATF4 antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for ATF4 purchase	MBS1758067 is an antibody targeting ATF4. Also known as Anti-ATF4 Antibody Picoband. Reactive in Human, Mouse, Rat. Host: Rabbit.



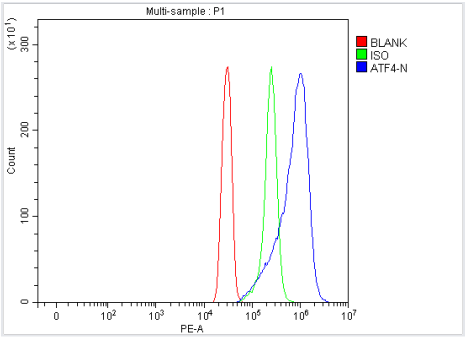
Western Blot (WB) of anti-ATF4 antibody

Figure 1. Western blot analysis of ATF4 using anti-ATF4 antibody (MBS1758067).Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel)/90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions.Lane 1: human HepG2 whole cell lysates,Lane 2: human 293T whole cell lysates,Lane 3: rat brain tissue lysates,Lane 4: mouse brain tissue lysates.After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-ATF4 antigen affinity purified polyclonal antibody (#MBS1758067) at 0.5ug/mL overnight at 4 degree C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (#MBS176460) with Tanon 5200 system. A specific band was detected for ATF4 at approximately 45-50 kDa. The expected band size for ATF4 is at 38,39,45-50 kDa.



Immunofluorescence (IF) of anti-ATF4 antibody

Figure 2. IF analysis of ATF4 using anti-ATF4 antibody (MBS1758067) and anti-Tubulin Alpha antibody (M03989-3).ATF4 was detected in immunocytochemical section of Hela cell. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (#MBS176582) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5ug/mL rabbit anti-ATF4 Antibody (MBS1758067) and mouse anti-Tubulin Alpha antibody (M03989-3) overnight at 4 degree C. Cy3 Conjugated Goat Anti-Rabbit IgG (BA1032) and DyLight488 Conjugated Goat Anti-Mouse IgG (BA1126) were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37 degree C. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Flow Cytometry (FC/FACS) of anti-ATF4 antibody
Figure 3. Flow Cytometry analysis of SiHa cells using anti-ATF4 antibody (MBS1758067).Overlay histogram showing SiHa cells stained with MBS1758067 (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-ATF4 Antibody (MBS1758067, 1ug/1x106 cells) for 30 min at 20 degree C. DyLight488 conjugated goat anti-rabbit IgG (MBS177405, 5-10ug/1x106 cells) was used as secondary antibody for 30 minutes at 20 degree C. Isotype control antibody (Green line) was rabbit IgG (1ug/1x106) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for ATF4. It may not necessarily be applicable to this product.

NCBI GI #	33469976
NCBI GeneID	468
NCBI Accession #	NP_001666.2
UniProt Primary Accession #	P18848
UniProt Secondary Accession #	Q9UH31
UniProt Related Accession #	P18848
GenBank Nucleotide #	NM_001675.2
NCBI Official Full Name	cyclic AMP-dependent transcription factor ATF-4
NCBI Official Synonym Full Names	activating transcription factor 4
NCBI Official Symbol	ATF4
NCBI Official Synonym Symbols	CREB2; TXREB; CREB-2; TAXREB67
UniProt Protein Name	Cyclic AMP-dependent transcription factor ATF-4
UniProt Synonym Protein Names	Activating transcription factor 4; Cyclic AMP-responsive element-binding protein 2; CREB-2; cAMP-responsive element-binding protein 2; DNA-binding protein TAXREB67; Tax-responsive enhancer element-binding protein 67
Protein Family	Cyclic AMP-dependent transcription factor
UniProt Gene Name	ATF4
UniProt Synonym Gene Names	CREB2; TXREB; cAMP-dependent transcription factor ATF-4; CREB-2; cAMP-responsive element-binding protein 2; TaxREB67
UniProt Entry Name	ATF4_HUMAN
NCBI Protein Information	cyclic AMP-dependent transcription factor ATF-4; DNA-binding protein TAXREB67; tax-responsive enhancer element B67; cAMP response element-binding protein 2; cAMP-dependent transcription factor ATF-4; cAMP-responsive element-binding protein 2; cyclic AMP-r

NCBI Summary for ATF4	This gene encodes a transcription factor that was originally identified as a widely expressed mammalian DNA binding protein that could bind a tax-responsive enhancer element in the LTR of HTLV-1. The encoded protein was also isolated and characterized as the cAMP-response element binding protein 2 (CREB-2). The protein encoded by this gene belongs to a family of DNA-binding proteins that includes the AP-1 family of transcription factors, cAMP-response element binding proteins (CREBs) and CREB-like proteins. These transcription factors share a leucine zipper region that is involved in protein-protein interactions, located C-terminal to a stretch of basic amino acids that functions as a DNA binding domain. Two alternative transcripts encoding the same protein have been described. Two pseudogenes are located on the X chromosome at q28 in a region containing a large inverted duplication. [provided by RefSeq, Sep 2011]
UniProt Comments for ATF4	ATF-4: a transcription factor that is a member of the leucine zipper family. Isolated and characterized as the cAMP-response element binding protein 2 (CREB-2). Involved in cisplatin resistance. Other members of the family include AP-1 transcription factors, cAMP-response element binding proteins (CREBs) and CREB-like proteins. Two alternatively spliced isoforms have been described. Protein type: Transcription factor; DNA-binding Chromosomal Location of Human Ortholog: 22q13.1 Cellular Component: nucleoplasm; neuron projection; cytoplasm; microtubule organizing center; nucleus Molecular Function: protein C-terminus binding; protein binding; leucine zipper domain binding; DNA binding; sequence-specific DNA binding; protein heterodimerization activity; transcription factor activity Biological Process: transcription from RNA polymerase II promoter; amino acid metabolic process; unfolded protein response; positive regulation of apoptosis; negative regulation of potassium ion transport; positive regulation of transcription, DNA-dependent; gluconeogenesis; positive regulation of transcription from RNA polymerase I promoter; cellular response to glucose starvation; cellular protein metabolic process; unfolded protein response, activation of signaling protein activity; regulation of transcription, DNA-dependent; positive regulation of neuron apoptosis; positive regulation of transcription from RNA polymerase II promoter; circadian regulation of gene expression; gamma-aminobutyric acid signaling pathway
Research Articles on ATF4	**1.** ATF4 acts as a positive regulator in TLR4-triggered cytokine production.
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