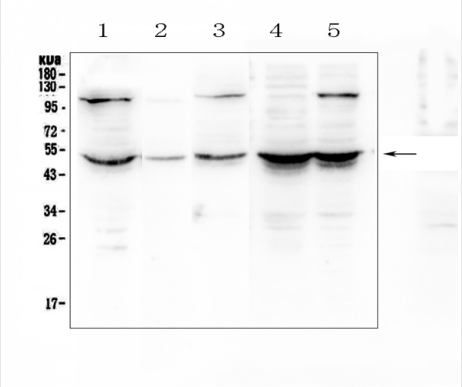
ATF4 Antibody – Rabbit Polyclonal

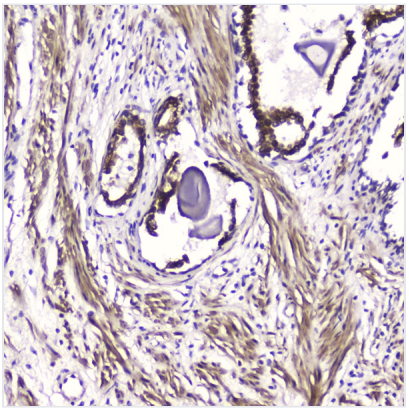
PRODUCT OVERVIEW

Product Name	ATF4, Polyclonal Antibody
Full Product Name	Anti-ATF4 Antibody
Product Gene Name	anti-ATF4 antibody
Product Synonym Names	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	IgG
Host	Rabbit
Species Reactivity	Human
Form/Format	Lyophilized
Purity/Purification	Immunogen Affinity Purified
Specificity	No cross reactivity with other proteins.
Preparation and Storage	Store at -20 degree C for one year. After reconstitution, at 4 degree C for one month. It can also be aliquotted and stored frozen at -20 degree C for a longer time. Avoid repeated freezing and thawing.
Molecular Weight	38,590 Da
3D Structure	ModBase 3D Structure for P18848
Immunogen	A synthetic peptide corresponding to a sequence of human ATF4 (KELEKKNEALKERADSLAKEIQYLKDLIEEVRKARGKKRVP).
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.
Relevant Detection Systems	It is recommended to use an Enhanced Chemiluminescent Kit with anti-Rabbit IgG (MBS176460) for Western blot, and HRP Conjugated anti-Rabbit IgG Super Vision Assay Kit (MBS176453) for IHC-P.
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), Immunohistochemistry (IHC) Paraffin
Application Notes for anti-ATF4 antibody	WB: 0.1-0.5 mug/ml IHC-P: 0.5-1 mug/ml Tested Species: In-house tested species with positive results. By Heat: Boiling the paraffin sections in 10mM citrate buffer, pH6.0, for 20mins is required for the staining of formalin/paraffin sections.
Related Product Information for anti-ATF4 antibody	Description: Rabbit IgG polyclonal antibody for ATF4 detection. Tested with WB, IHC-P in Human. Background: ATF4, Activating Transcription Factor 4, is also known as CREB2. ATF4 belongs to the large ATF/CREB family of transcription factors which bind DNA via their basic region and dimerize via their leucine zipper domain to form a variety of homo- and heterodimers to regulate gene transcription. It is identified that members of this family share significant sequence similarity within a leucine zipper DNA-binding motif and an adjacent basic region. The ATF4 gene is mapped to chromosome 22. Unlike CREB, which activates transcription from CRE-containing promoters, CREB2 functions as a specific repressor of CRE-dependent transcription. The transcriptional repressor activity resides within the C-terminal leucine zipper and basic domain region of the CREB2 protein.

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	MBS1751238 is an antibody targeting ATF4. Reactive in Human. Host: Rabbit.



Western Blot (WB) of anti-ATF4 antibody
Figure 1. Western blot analysis of ATF4 using anti-ATF4 antibody.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 50ug of sample under reducing conditions.Lane 1: human Hela whole cell lysates,Lane 2: human placenta tissue lysates,Lane 3: human HepG2 whole cell lysates,Lane 4: human MDA-MB-231 whole cell lysates,Lane 5: human SW620 whole cell lysates.After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA 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 at 0.5 ug/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 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit with Tanon 5200 system. A specific band was detected for ATF4 at approximately 49KD. The expected band size for ATF4 is at 39KD.



Immunohistochemistry (IHC) of anti-ATF4 antibody
Figure 3. IHC analysis of ATF4 using anti-ATF4 antibody.ATF4 was detected in paraffin-embedded section of human prostatic cancer tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/mL rabbit anti-ATF4 antibody.ATF4 was detected in paraffin-embedded section of human prostatic cancer tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/mL rabbit anti-ATF4 Antibody overnight at 4 degree C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 degree C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) with DAB as the chromogen.

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 #	Q96AQ3; Q9UH31
UniProt Related Accession #	P18848
GenBank Nucleotide #	NM_001675.4
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; TaxREB67
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
NCBI Protein Information	cyclic AMP-dependent transcription factor ATF-4
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	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 (). 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).
Research Articles on ATF4	**1.** Our data suggests a novel interaction between Nrf2 and ATF4 under oxidative and endoplasmic reticulum stress, thus drives specific enzymatic and non-enzymatic reactions of antioxidant mechanisms maintaining redox homeostasis.
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