10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-TAK1 Antibody

Catalog # AP60337

Product Information

Application	WB, IHC, IF/IC
Primary Accession	O43318
Reactivity	Human, Mouse, Rat, Zebrafish, Pig, Bovine
Host	Rabbit
Clonality	Polyclonal
Calculated MW	67196

Additional Information

Gene ID	6885
Other Names	TAK1; Mitogen-activated protein kinase kinase kinase 7; Transforming growth factor-beta-activated kinase 1; TGF-beta-activated kinase 1
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the center region of human TAK1. The exact sequence is proprietary.
Dilution	WB~~WB (1/500 - 1/1000), IHC (1/100 - 1/200) IHC~~WB (1/500 - 1/1000), IHC (1/100 - 1/200) IF/IC~~N/A
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

Name	MAP3K7 {ECO:0000303|PubMed:28397838, ECO:0000312|HGNC:HGNC:6859}
Function	Serine/threonine kinase which acts as an essential component of the MAP kinase signal transduction pathway (PubMed:10094049, PubMed:11460167, PubMed:12589052, PubMed:16845370, PubMed:16893890, PubMed:21512573, PubMed:8663074, PubMed:9079627). Plays an important role in the cascades of cellular responses evoked by changes in the environment (PubMed:10094049, PubMed:11460167, PubMed:12589052, PubMed:16845370, PubMed:16893890, PubMed:21512573, PubMed:8663074, PubMed:9079627). Mediates signal transduction of TRAF6, various cytokines including interleukin-1 (IL-1), transforming growth factor- beta (TGFB), TGFB-related factors like BMP2 and BMP4, toll-like receptors (TLR), tumor necrosis factor receptor CD40 and B-cell receptor (BCR) (PubMed:16893890, PubMed:9079627). Once activated, acts as an upstream activator of the MKK/JNK signal transduction cascade and the p38 MAPK signal transduction

cascade through the phosphorylation and activation of several MAP kinase kinases like MAP2K1/MEK1, MAP2K3/MKK3, MAP2K6/MKK6 and MAP2K7/MKK7 (PubMed:11460167, PubMed:8663074). These MAP2Ks in turn activate p38 MAPKs and c-jun N- terminal kinases (JNKs); both p38 MAPK and JNK pathways control the transcription factors activator protein-1 (AP-1) (PubMed:11460167, PubMed:12589052, PubMed:8663074). Independently of MAP2Ks and p38 MAPKs, acts as a key activator of NF-kappa-B by promoting activation of the I-kappa-B-kinase (IKK) core complex (PubMed:12589052, PubMed:8663074). Mechanistically, recruited to polyubiquitin chains of RIPK2 and IKBKG/NEMO via TAB2/MAP3K7IP2 and TAB3/MAP3K7IP3, and catalyzes phosphorylation and activation of IKBKB/IKKB component of the IKK complex, leading to NF-kappa-B activation (PubMed:10094049, PubMed:11460167). In osmotic stress signaling, plays a major role in the activation of MAPK8/JNK1, but not that of NF-kappa-B (PubMed:16893890). Promotes TRIM5 capsid-specific restriction activity (PubMed:21512573). Phosphorylates RIPK1 at 'Ser-321' which positively regulates RIPK1 interaction with RIPK3 to promote necroptosis but negatively regulates RIPK1 kinase activity and its interaction with FADD to mediate apoptosis (By similarity). Phosphorylates STING1 in response to cGAMP-activation, promoting association between STEEP1 and STING1 and STING1 translocation to COPII vesicles (PubMed:37832545).

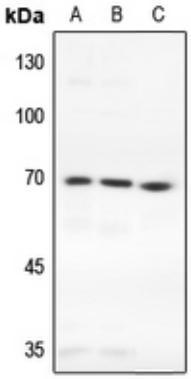
Cellular Location

Cytoplasm. Cell membrane; Peripheral membrane protein; Cytoplasmic side. Note=Although the majority of MAP3K7/TAK1 is found in the cytosol, when complexed with TAB1/MAP3K7IP1 and TAB2/MAP3K7IP2, it is also localized at the cell membrane

Tissue Location

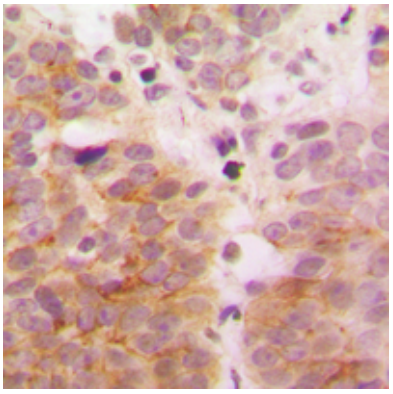
Isoform 1A is the most abundant in ovary, skeletal muscle, spleen and blood mononuclear cells. Isoform 1B is highly expressed in brain, kidney and small intestine. Isoform 1C is the major form in prostate. Isoform 1D is the less abundant form

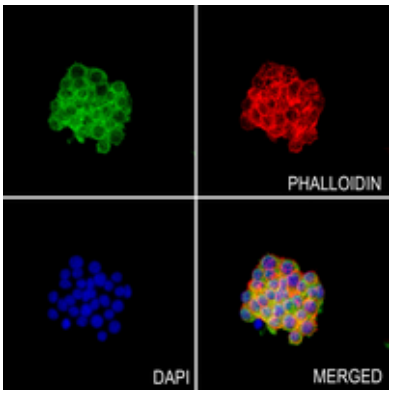
Images



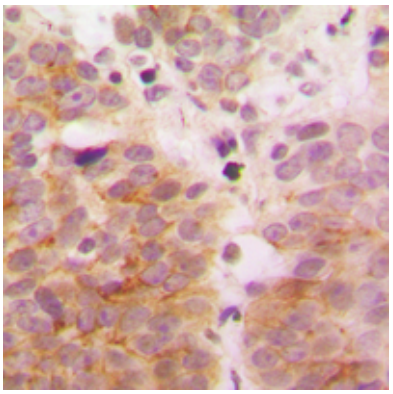
Western blot analysis of TAK1 expression in mouse lung (A), mouse liver (B), rat liver (C) whole cell lysates. (Predicted band size: 53; 56; 64; 67 kD; Observed band size: 70 kD)

Immunohistochemical analysis of TAK1 staining in human breast cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.





Immunofluorescent analysis of TAK1 staining in MDAMB231 cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a hidified chamber. Cells were washed with PBST and incubated with a AF488-conjugated secondary antibody (green) in PBS at room temperature in the dark. Phalloidin - AF594 was used to stain Actin filaments (red). DAPI was used to stain the cell nuclei (blue).



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Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.