

TAK1 (Ser439) Antibody
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP22250a

Specification

TAK1 (Ser439) Antibody - Product Information

Application	IF, WB,E
Primary Accession	O43318
Other Accession	O5RFL3 , POC8E4
Reactivity	Human, Mouse
Predicted	Rat
Host	Rabbit
Clonality	polyclonal
Isotype	Rabbit IgG
Calculated MW	67196

TAK1 (Ser439) Antibody - Additional Information

Gene ID 6885

Other Names

Mitogen-activated protein kinase kinase kinase 7, 2.7.11.25, Transforming growth factor-beta-activated kinase 1, TGF-beta-activated kinase 1, MAP3K7, TAK1

Target/Specificity

This TAK1 (Ser439) antibody is generated from a rabbit immunized with a KLH conjugated synthetic peptide between 410-444 amino acids from human TAK1.

Dilution

IF~~1:25

WB~~1:1000-1:2000

Format

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

Storage

Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions

TAK1 (Ser439) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

TAK1 (Ser439) Antibody - 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

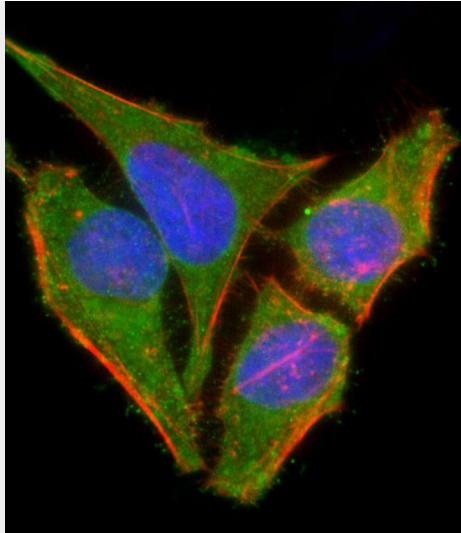
TAK1 (Ser439) Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

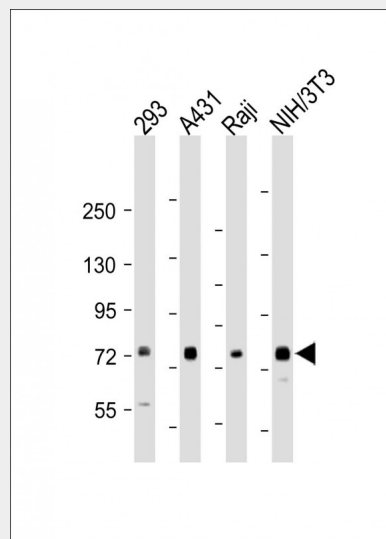
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

TAK1 (Ser439) Antibody - Images





Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (human cervical epithelial adenocarcinoma cell line) cells labeling MAP3K7 with AP22250a at 1/25 dilution, followed by Dylight® 488-conjugated goat anti-rabbit IgG (NK179883) secondary antibody at 1/200 dilution (green). Immunofluorescence image showing cytoplasm and weak nucleus staining on HeLa cell line. Cytoplasmic actin is detected with Dylight® 554 Phalloidin (PD18466410) at 1/100 dilution (red). The nuclear counter stain is DAPI (blue).



All lanes : Anti-TAK1 (Ser439) Antibody at 1:1000-1:2000 dilution Lane 1: 293 whole cell lysate Lane 2: A431 whole cell lysate Lane 3: Raji whole cell lysate Lane 4: NIH/3T3 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 67 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

TAK1 (Ser439) Antibody - Background

Serine/threonine kinase which acts as an essential component of the MAP kinase signal transduction pathway. Plays an important role in the cascades of cellular responses evoked by changes in the environment. 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). Ceramides are also able to activate MAP3K7/TAK1. 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. These MAP2Ks in turn activate p38 MAPKs, c-jun N-terminal kinases (JNKs) and I-kappa-B kinase complex (IKK). Both p38 MAPK and JNK pathways control the transcription factors activator protein-1 (AP-1), while nuclear factor-kappa B is activated by IKK. MAP3K7 activates also IKBKB and MAPK8/JNK1 in response to TRAF6 signaling and mediates BMP2- induced apoptosis. In osmotic stress signaling, plays a major role in the activation of MAPK8/JNK1, but not that of NF-kappa-B. Promotes TRIM5 capsid-specific restriction activity.

TAK1 (Ser439) Antibody - References

- Sakurai H., et al. *Biochem. Biophys. Res. Commun.* 243:545-549(1998).
Dempsey C.E., et al. *Biochim. Biophys. Acta* 1517:46-52(2000).
Ota T., et al. *Nat. Genet.* 36:40-45(2004).
Mungall A.J., et al. *Nature* 425:805-811(2003).
Mural R.J., et al. Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.