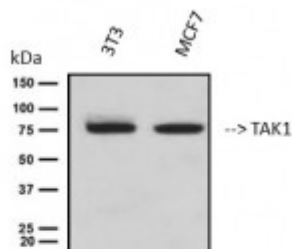


Anti-Tak1 antibody



Western Blot (WB) analysis of 3T3 and MCF7 cell lysates using TAK1 antibody (STJ95901).



Description

Tak1 is a protein encoded by the MAP3K7 gene which is approximately 67,1 kDa. Tak1 is localised to the cytoplasm and cell membrane. It is involved in activated TLR4 signalling, toll-like receptor signalling pathways, IL-17 family signalling pathways and RANK signalling in osteoclasts. It is a serine/threonine kinase which acts as an essential component of the MAP kinase signal transduction pathway. It plays an important role in the cascades of cellular responses evoked by changes in the environment. It also mediates the signalling transduction induced by TGF beta and morphogenetic protein, and controls a variety of cell functions including transcription regulation and apoptosis. Tak1 is expressed in the blood, liver, lung and in the cells of the nervous system. Mutations in the MAP3K7 gene may result in front metaphyseal dysplasia. STJ95901 was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen. This polyclonal antibody detects endogenous levels of Tak1 protein.

Model	STJ95901
Host	Rabbit
Reactivity	Human, Mouse, Rat
Applications	ELISA, IHC, WB
Immunogen	Synthesized peptide derived from human Tak1 around the non-phosphorylation site of T187.
Immunogen Region	130-210 aa
Gene ID	6885
Gene Symbol	MAP3K7

Dilution range	WB 1:500-1:2000IHC 1:100-1:300ELISA 1:40000
Specificity	Tak1 Polyclonal Antibody detects endogenous levels of Tak1 protein.
Tissue Specificity	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.
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Note	For Research Use Only (RUO).
Protein Name	Mitogen-activated protein kinase kinase kinase 7 Transforming growth factor-beta-activated kinase 1 TGF-beta-activated kinase 1
Molecular Weight	70 kDa
Clonality	Polyclonal
Conjugation	Unconjugated
Isotype	IgG
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Concentration	1 mg/ml
Storage Instruction	Store at -20°C, and avoid repeat freeze-thaw cycles.
Database Links	HGNC:6859 OMIM:157800
Alternative Names	Mitogen-activated protein kinase kinase kinase 7 Transforming growth factor-beta-activated kinase 1 TGF-beta-activated kinase 1
Function	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.
Cellular Localization	Cytoplasm Cell membrane. 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.

Post-translational Modifications

Association with TAB1/MAP3K7IP1 promotes autophosphorylation at Ser-192 and subsequent activation. Association with TAB2/MAP3K7IP2, itself associated with free unanchored Lys-63 polyubiquitin chain, promotes autophosphorylation and subsequent activation of MAP3K7. Dephosphorylation at Ser-192 by PPM1B/PP2CB and at Thr-187 by PP2A and PPP6C leads to inactivation. 'Lys-48'-linked polyubiquitination at Lys-72 is induced by TNFalpha, and leads to proteasomal degradation. Undergoes 'Lys-48'-linked polyubiquitination catalyzed by ITCH . Requires 'Lys-63'-linked polyubiquitination for autophosphorylation and subsequent activation. 'Lys-63'-linked ubiquitination does not lead to proteasomal degradation. Deubiquitinated by CYLD, a protease that selectively cleaves 'Lys-63'-linked ubiquitin chains. Deubiquitinated by Y.enterocolitica YopP.