

TBK1 Antibody (S172)
Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7887a

Specification

TBK1 Antibody (S172) - Product Information

Application	WB, IHC-P,E
Primary Accession	O9UHD2
Other Accession	O6DFJ6 , O9WUN2 , NP_037386 , O1JPV3
Reactivity	Human, Mouse
Predicted	Xenopus
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Antigen Region	150-181

TBK1 Antibody (S172) - Additional Information

Gene ID 29110

Other Names

Serine/threonine-protein kinase TBK1, NF-kappa-B-activating kinase, T2K, TANK-binding kinase 1, TBK1, NAK

Target/Specificity

This TBK antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 150-181 amino acids from human TBK.

Dilution

WB~~1:2000
IHC-P~~1:25

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

TBK1 Antibody (S172) is for research use only and not for use in diagnostic or therapeutic procedures.

TBK1 Antibody (S172) - Protein Information

Name TBK1 {ECO:0000303|PubMed:10581243, ECO:0000312|HGNC:HGNC:11584}

Function Serine/threonine kinase that plays an essential role in regulating inflammatory responses to foreign agents (PubMed:[10581243](#), PubMed:[11839743](#), PubMed:[12692549](#), PubMed:[12702806](#), PubMed:[14703513](#), PubMed:[15367631](#), PubMed:[15485837](#), PubMed:[18583960](#), PubMed:[21138416](#), PubMed:[23453971](#), PubMed:[23453972](#), PubMed:[23746807](#), PubMed:[25636800](#), PubMed:[26611359](#), PubMed:[32404352](#), PubMed:[34363755](#), PubMed:[32298923](#)). Following activation of toll-like receptors by viral or bacterial components, associates with TRAF3 and TANK and phosphorylates interferon regulatory factors (IRFs) IRF3 and IRF7 as well as DDX3X (PubMed:[12692549](#), PubMed:[12702806](#), PubMed:[14703513](#), PubMed:[15367631](#), PubMed:[18583960](#), PubMed:[25636800](#)). This activity allows subsequent homodimerization and nuclear translocation of the IRFs leading to transcriptional activation of pro-inflammatory and antiviral genes including IFNA and IFNB (PubMed:[12702806](#), PubMed:[15367631](#), PubMed:[25636800](#), PubMed:[32972995](#)). In order to establish such an antiviral state, TBK1 form several different complexes whose composition depends on the type of cell and cellular stimuli (PubMed:[23453971](#), PubMed:[23453972](#), PubMed:[23746807](#)). Plays a key role in IRF3 activation: acts by first phosphorylating innate adapter proteins MAVS, STING1 and TICAM1 on their pLxIS motif, leading to recruitment of IRF3, thereby licensing IRF3 for phosphorylation by TBK1 (PubMed:[25636800](#), PubMed:[30842653](#)). Phosphorylated IRF3 dissociates from the adapter proteins, dimerizes, and then enters the nucleus to induce expression of interferons (PubMed:[25636800](#)). Thus, several scaffolding molecules including FADD, TRADD, MAVS, AZI2, TANK or TBKBP1/SINTBAD can be recruited to the TBK1-containing-complexes (PubMed:[21931631](#)). Under particular conditions, functions as a NF-kappa-B effector by phosphorylating NF-kappa-B inhibitor alpha/NFKBIA, IKBKB or RELA to translocate NF-Kappa-B to the nucleus (PubMed:[10783893](#), PubMed:[15489227](#)). Restricts bacterial proliferation by phosphorylating the autophagy receptor OPTN/Optineurin on 'Ser-177', thus enhancing LC3 binding affinity and antibacterial autophagy (PubMed:[21617041](#)). Phosphorylates SMCR8 component of the C9orf72-SMCR8 complex, promoting autophagosome maturation (PubMed:[27103069](#)). Phosphorylates ATG8 proteins MAP1LC3C and GABARAPL2, thereby preventing their delipidation and premature removal from nascent autophagosomes (PubMed:[31709703](#)). Seems to play a role in energy balance regulation by sustaining a state of chronic, low-grade inflammation in obesity, which leads to a negative impact on insulin sensitivity (By similarity). Attenuates retroviral budding by phosphorylating the endosomal sorting complex required for transport-I (ESCRT-I) subunit VPS37C (PubMed:[21270402](#)). Phosphorylates Borna disease virus (BDV) P protein (PubMed:[16155125](#)). Plays an essential role in the TLR3- and IFN-dependent control of herpes virus HSV-1 and HSV-2 infections in the central nervous system (PubMed:[22851595](#)). Acts both as a positive and negative regulator of the mTORC1 complex, depending on the context: activates mTORC1 in response to growth factors by catalyzing phosphorylation of MTOR, while it limits the mTORC1 complex by promoting phosphorylation of RPTOR (PubMed:[29150432](#), PubMed:[31530866](#)). Acts as a positive regulator of the mTORC2 complex by mediating phosphorylation of MTOR, leading to increased phosphorylation and activation of AKT1 (By similarity). Phosphorylates and activates AKT1 (PubMed:[21464307](#)). Involved in the regulation of TNF-induced RIPK1-mediated cell death, probably acting via CYLD phosphorylation that in turn controls RIPK1 ubiquitination status (PubMed:[34363755](#)). Participates also in the differentiation of T follicular regulatory cells together with the receptor ICOS (PubMed:[27135603](#)).

Cellular Location

Cytoplasm. Note=Upon mitogen stimulation or triggering of the immune system, TBK1 is recruited to the exocyst by EXOC2.

Tissue Location

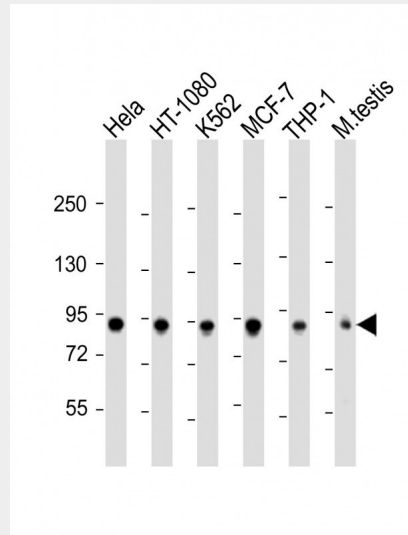
Ubiquitous with higher expression in testis. Expressed in the ganglion cells, nerve fiber layer and microvasculature of the retina.

TBK1 Antibody (S172) - Protocols

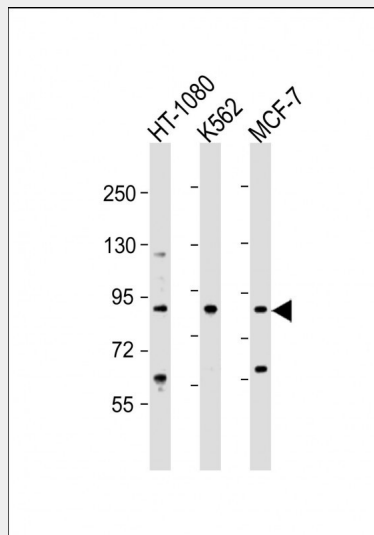
Provided below are standard protocols that you may find useful for product applications.

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

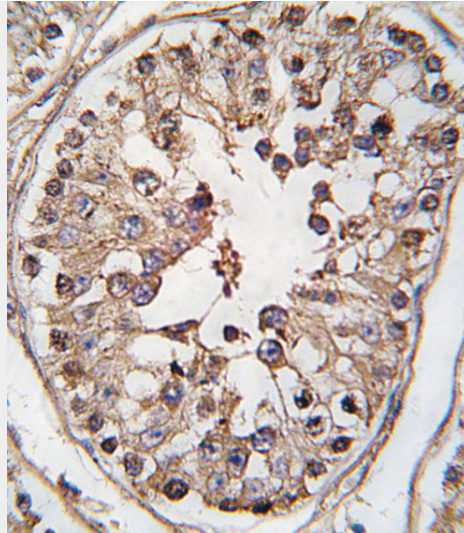
TBK1 Antibody (S172) - Images



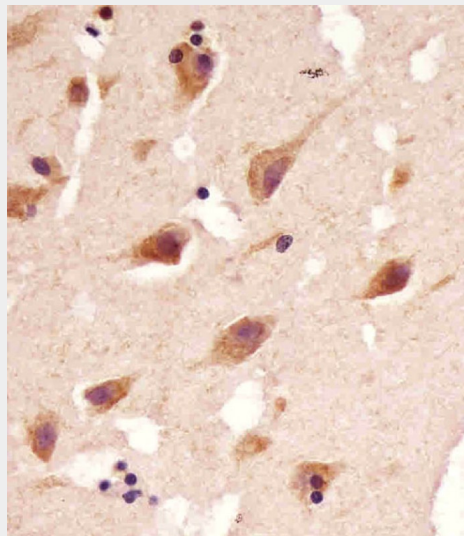
All lanes : Anti-TBK1 Antibody (S172) at 1:2000 dilution Lane 1: HeLa whole cell lysate Lane 2: HT-1080 whole cell lysate Lane 3: K562 whole cell lysate Lane 4: MCF-7 whole cell lysate Lane 5: THP-1 whole cell lysate Lane 6: mouse testis lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 84kDa Blocking/Dilution buffer: 5% NFD/MTBST.



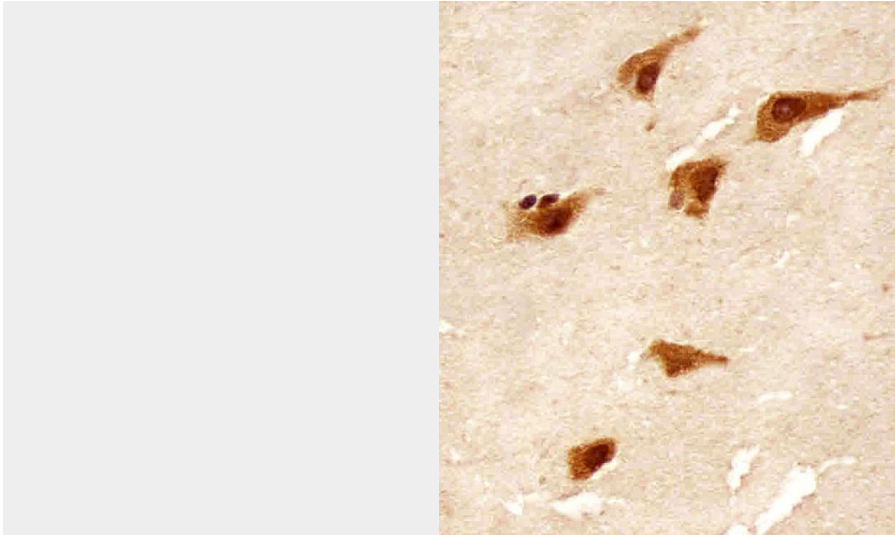
All lanes : Anti-TBK Antibody (S172) at 1:2000 dilution Lane 1: HT-1080 whole cell lysate Lane 2: K562 whole cell lysate Lane 3: MCF-7 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 84 kDa Blocking/Dilution buffer: 5% NFD/MTBST.



Formalin-fixed and paraffin-embedded human testis tissue reacted with TBK-pS172, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



AP7887a staining TBK1 in human brain tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 3% BSA for 0.5 hour at room temperature; antigen retrieval was by heat mediation with a citrate buffer (pH6). Samples were incubated with primary antibody (1/25) for 1 hours at 37°C. A undiluted biotinylated goat polyvalent antibody was used as the secondary antibody.



AP7887a staining TBK in human brain tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 3% BSA for 0.5 hour at room temperature; antigen retrieval was by heat mediation with a citrate buffer (pH6). Samples were incubated with primary antibody (1/25) for 1 hour at 37°C. A undiluted biotinylated goat polyvalent antibody was used as the secondary antibody.

TBK1 Antibody (S172) - Background

The NF-kappa-B (NFKB) complex of proteins is inhibited by I-kappa-B (IKB) proteins, which inactivate NFKB by trapping it in the cytoplasm. Phosphorylation of serine residues on the IKB proteins by IKB kinases marks them for destruction via the ubiquitination pathway, thereby allowing activation and nuclear translocation of the NFKB complex. TBK is similar to IKB kinases and can mediate NFKB activation in response to certain growth factors. The protein can form a complex with the IKB protein TANK and TRAF2 and release the NFKB inhibition caused by TANK.

TBK1 Antibody (S172) - References

Deng, W., J. Biol. Chem. 283 (51), 35590-35597 (2008)
Chessler, A.D., J. Immunol. 181 (11), 7917-7924 (2008)
Soulat, D., EMBO J. 27 (15), 2135-2146 (2008)

TBK1 Antibody (S172) - Citations

- [Capsular Polysaccharide is a Main Component of Mycoplasma ovipneumoniae in the Pathogen-Induced Toll-Like Receptor-Mediated Inflammatory Responses in Sheep Airway Epithelial Cells.](#)