

# TBK1 Rabbit mAb

Catalog # AP77372

## Product Information

Application	WB, IHC-P, ICC
Primary Accession	<a href="#">Q9UHD2</a>
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Monoclonal Antibody
Calculated MW	83642

## Additional Information

Gene ID	29110
Other Names	TBK1
Dilution	WB~~1/500-1/1000 IHC-P~~N/A ICC~~N/A
Format	50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% sodium azide and 0.05% BSA.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

## Protein Information

Name	TBK1 {ECO:0000303 PubMed:10581243, ECO:0000312 HGNC:HGNC:11584}
Function	<p>Serine/threonine kinase that plays an essential role in regulating inflammatory responses to foreign agents (PubMed:<a href="#">10581243</a>, PubMed:<a href="#">11839743</a>, PubMed:<a href="#">12692549</a>, PubMed:<a href="#">12702806</a>, PubMed:<a href="#">14703513</a>, PubMed:<a href="#">15367631</a>, PubMed:<a href="#">15485837</a>, PubMed:<a href="#">18583960</a>, PubMed:<a href="#">21138416</a>, PubMed:<a href="#">23453971</a>, PubMed:<a href="#">23453972</a>, PubMed:<a href="#">23746807</a>, PubMed:<a href="#">25636800</a>, PubMed:<a href="#">26611359</a>, PubMed:<a href="#">32404352</a>, PubMed:<a href="#">34363755</a>, PubMed:<a href="#">32298923</a>). 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:<a href="#">12692549</a>, PubMed:<a href="#">12702806</a>, PubMed:<a href="#">14703513</a>, PubMed:<a href="#">15367631</a>, PubMed:<a href="#">18583960</a>, PubMed:<a href="#">25636800</a>). 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:<a href="#">12702806</a>, PubMed:<a href="#">15367631</a>, PubMed:<a href="#">25636800</a>, PubMed:<a href="#">32972995</a>). 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:<a href="#">23453971</a>, PubMed:<a href="#">23453972</a>,</p>

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](#), PubMed:[37926288](#)). 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](#)). Also participates in the differentiation of T follicular regulatory cells together with the receptor ICOS (PubMed:[27135603](#)).

#### Cellular Location

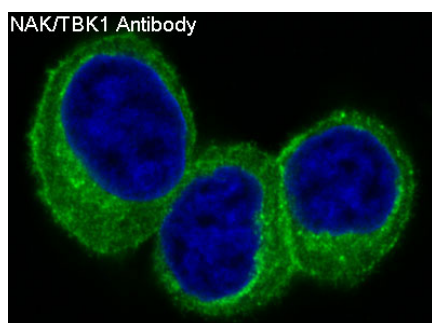
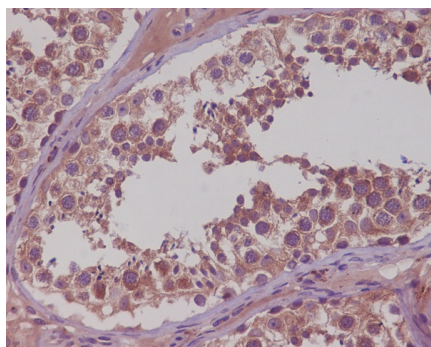
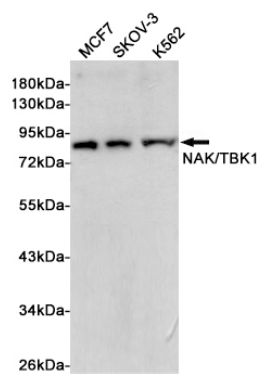
Cytoplasm. Note=Upon mitogen stimulation or triggering of the immune system, TBK1 is recruited to the exocyst by EXOC2.

#### Tissue Location

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

#### Images

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