

**KD-Validated Anti-TANK Binding Kinase 1 Rabbit Monoclonal Antibody**  
**Rabbit monoclonal antibody**  
**Catalog # AGI1845****Specification****KD-Validated Anti-TANK Binding Kinase 1 Rabbit Monoclonal Antibody - Product Information**

|                   |                                                                                                                                                                                                   |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Application       | WB, FC, ICC                                                                                                                                                                                       |
| Primary Accession | <a href="#">Q9UHD2</a>                                                                                                                                                                            |
| Reactivity        | Rat, Human, Mouse                                                                                                                                                                                 |
| Clonality         | Monoclonal                                                                                                                                                                                        |
| Isotype           | Rabbit IgG                                                                                                                                                                                        |
| Calculated MW     | Predicted, 83 kDa, observed, 75 kDa kDa                                                                                                                                                           |
| Gene Name         | TBK1                                                                                                                                                                                              |
| Aliases           | TBK1; TANK Binding Kinase 1; NAK; Serine/Threonine-Protein Kinase TBK1; NF-Kappa-B-Activating Kinase; TANK-Binding Kinase 1; T2K; NF-KB-Activating Kinase; EC 2.7.11.1; EC 2.7.11; FTDALS4; IIAE8 |
| Immunogen         | A synthesized peptide derived from human NAK/TBK1 (N-term)                                                                                                                                        |

**KD-Validated Anti-TANK Binding Kinase 1 Rabbit Monoclonal Antibody - Additional Information**Gene ID **29110****Other Names**

Serine/threonine-protein kinase TBK1, 2.7.11.1, NF-kappa-B-activating kinase, T2K, TANK-binding kinase 1, TBK1 {ECO:0000303|PubMed:10581243, ECO:0000312|HGNC:HGNC:11584}

**KD-Validated Anti-TANK Binding Kinase 1 Rabbit Monoclonal Antibody - 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:<a href="http://www.uniprot.org/citations/10581243" target="\_blank">10581243</a>, PubMed:<a href="http://www.uniprot.org/citations/11839743" target="\_blank">11839743</a>, PubMed:<a href="http://www.uniprot.org/citations/12692549" target="\_blank">12692549</a>, PubMed:<a href="http://www.uniprot.org/citations/12702806" target="\_blank">12702806</a>, PubMed:<a href="http://www.uniprot.org/citations/14703513" target="\_blank">14703513</a>, PubMed:<a href="http://www.uniprot.org/citations/15367631" target="\_blank">15367631</a>, PubMed:<a href="http://www.uniprot.org/citations/15485837" target="\_blank">15485837</a>, PubMed:<a href="http://www.uniprot.org/citations/18583960" target="\_blank">18583960</a>, PubMed:<a href="http://www.uniprot.org/citations/21138416" target="\_blank">21138416</a>, PubMed:<a href="http://www.uniprot.org/citations/23453971" target="\_blank">23453971</a>)

target="\_blank">23453971</a>, PubMed:<a href="http://www.uniprot.org/citations/23453972" target="\_blank">23453972</a>, PubMed:<a href="http://www.uniprot.org/citations/23746807" target="\_blank">23746807</a>, PubMed:<a href="http://www.uniprot.org/citations/25636800" target="\_blank">25636800</a>, PubMed:<a href="http://www.uniprot.org/citations/26611359" target="\_blank">26611359</a>, PubMed:<a href="http://www.uniprot.org/citations/32404352" target="\_blank">32404352</a>, PubMed:<a href="http://www.uniprot.org/citations/34363755" target="\_blank">34363755</a>, PubMed:<a href="http://www.uniprot.org/citations/32298923" target="\_blank">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="http://www.uniprot.org/citations/12692549" target="\_blank">12692549</a>, PubMed:<a href="http://www.uniprot.org/citations/12702806" target="\_blank">12702806</a>, PubMed:<a href="http://www.uniprot.org/citations/14703513" target="\_blank">14703513</a>, PubMed:<a href="http://www.uniprot.org/citations/15367631" target="\_blank">15367631</a>, PubMed:<a href="http://www.uniprot.org/citations/18583960" target="\_blank">18583960</a>, PubMed:<a href="http://www.uniprot.org/citations/25636800" target="\_blank">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="http://www.uniprot.org/citations/12702806" target="\_blank">12702806</a>, PubMed:<a href="http://www.uniprot.org/citations/15367631" target="\_blank">15367631</a>, PubMed:<a href="http://www.uniprot.org/citations/25636800" target="\_blank">25636800</a>, PubMed:<a href="http://www.uniprot.org/citations/32972995" target="\_blank">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="http://www.uniprot.org/citations/23453971" target="\_blank">23453971</a>, PubMed:<a href="http://www.uniprot.org/citations/23453972" target="\_blank">23453972</a>, PubMed:<a href="http://www.uniprot.org/citations/23746807" target="\_blank">23746807</a>). 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:<a href="http://www.uniprot.org/citations/25636800" target="\_blank">25636800</a>, PubMed:<a href="http://www.uniprot.org/citations/30842653" target="\_blank">30842653</a>, PubMed:<a href="http://www.uniprot.org/citations/37926288" target="\_blank">37926288</a>). Phosphorylated IRF3 dissociates from the adapter proteins, dimerizes, and then enters the nucleus to induce expression of interferons (PubMed:<a href="http://www.uniprot.org/citations/25636800" target="\_blank">25636800</a>). Thus, several scaffolding molecules including FADD, TRADD, MAVS, AZI2, TANK or TBKBP1/SINTBAD can be recruited to the TBK1-containing- complexes (PubMed:<a href="http://www.uniprot.org/citations/21931631" target="\_blank">21931631</a>). 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:<a href="http://www.uniprot.org/citations/10783893" target="\_blank">10783893</a>, PubMed:<a href="http://www.uniprot.org/citations/15489227" target="\_blank">15489227</a>). Restricts bacterial proliferation by phosphorylating the autophagy receptor OPTN/Optineurin on 'Ser-177', thus enhancing LC3 binding affinity and antibacterial autophagy (PubMed:<a href="http://www.uniprot.org/citations/21617041" target="\_blank">21617041</a>). Phosphorylates SMCR8 component of the C9orf72-SMCR8 complex, promoting autophagosome maturation (PubMed:<a href="http://www.uniprot.org/citations/27103069" target="\_blank">27103069</a>). Phosphorylates ATG8 proteins MAP1LC3C and GABARAPL2, thereby preventing their delipidation and premature removal from nascent autophagosomes (PubMed:<a href="http://www.uniprot.org/citations/31709703" target="\_blank">31709703</a>). 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:<a href="http://www.uniprot.org/citations/21270402" target="\_blank">21270402</a>). Phosphorylates Borna disease virus (BDV) P protein (PubMed:<a href="http://www.uniprot.org/citations/16155125" target="\_blank">16155125</a>). 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:<a href="http://www.uniprot.org/citations/22851595" target="\_blank">22851595</a>). 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:<a href="http://www.uniprot.org/citations/29150432" target="\_blank">29150432</a>, PubMed:<a href="http://www.uniprot.org/citations/31530866" target="\_blank">31530866</a>). 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:<a href="http://www.uniprot.org/citations/21464307" target="\_blank">21464307</a>). Involved in the regulation of TNF-induced RIPK1- mediated cell death, probably acting via CYLD phosphorylation that in turn controls RIPK1 ubiquitination status (PubMed:<a href="http://www.uniprot.org/citations/34363755" target="\_blank">34363755</a>). Also participates in the differentiation of T follicular regulatory cells together with the receptor ICOS (PubMed:<a href="http://www.uniprot.org/citations/27135603" target="\_blank">27135603</a>).

### Cellular Location

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

### Tissue Location

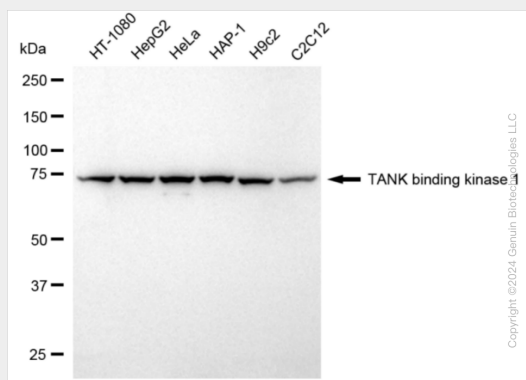
Ubiquitous with higher expression in testis. Expressed in the ganglion cells, nerve fiber layer and microvasculature of the retina.

## KD-Validated Anti-TANK Binding Kinase 1 Rabbit Monoclonal Antibody - Protocols

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

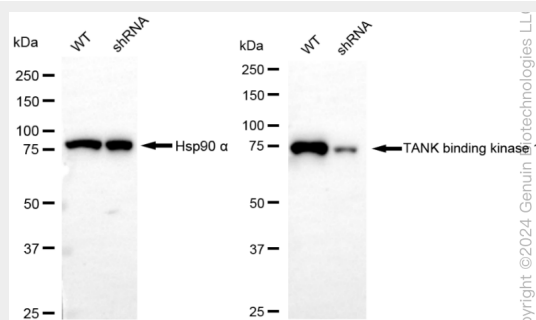
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

## KD-Validated Anti-TANK Binding Kinase 1 Rabbit Monoclonal Antibody - Images

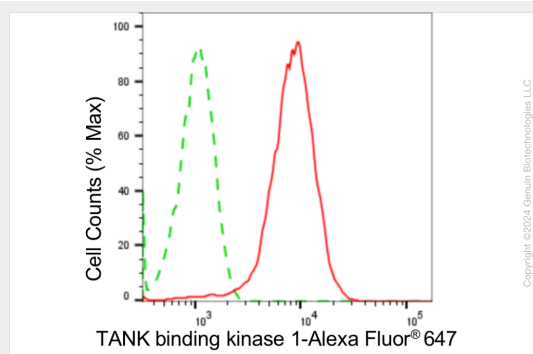


Western blotting analysis using anti-TANK binding kinase 1 antibody (Cat#AGI1845). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was

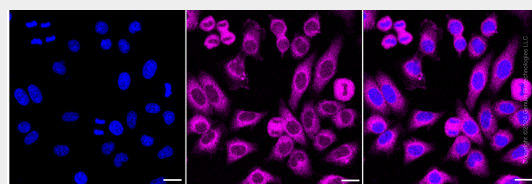
incubated with anti-TANK binding kinase 1 antibody (Cat#AGI1845, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Western blotting analysis using anti-TANK binding kinase 1 antibody (Cat#AGI1845). TANK binding kinase 1 expression in wild type (WT) and TANK binding kinase 1 (TBK1) shRNA knockdown (KD) HeLa cells with 20 µg of total cell lysates. Hsp90 α serves as a loading control. The blot was incubated with anti-TANK binding kinase 1 antibody (Cat#AGI1845, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Flow cytometric analysis of TANK binding kinase 1 expression in HepG2 cells using anti-TANK binding kinase 1 antibody (Cat#AGI1845, 1:2,000). Green, isotype control; red, TANK binding kinase 1.



Immunocytochemical staining of HepG2 cells with anti-TANK binding kinase 1 antibody (Cat#AGI1845, 1:1,000). Nuclei were stained blue with DAPI; TANK binding kinase 1 was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Medium. Scale bar: 20 µm.