

Anti-NAK Antibody
Catalog # ABO11424**Specification**

Anti-NAK Antibody - Product Information

Application	IHC, WB
Primary Accession	Q9UHD2
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

Description

Rabbit IgG polyclonal antibody for Serine/threonine-protein kinase TBK1(TBK1) detection. Tested with WB, IHC-P in Human;Mouse;Rat.

Reconstitution

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-NAK 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, NAK

Calculated MW

83642 MW KDa

Application Details

Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Rat, Mouse, By Heat
Western blot, 0.1-0.5 µg/ml, Human, Rat, Mouse

Subcellular Localization

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

Tissue Specificity

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

Protein Name

Serine/threonine-protein kinase TBK1

Contents

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na₂HPO₄, 0.05mg Thimerosal, 0.05mg NaN₃.

Immunogen

A synthetic peptide corresponding to a sequence at the C-terminus of human NAK(577-590aa

YNEEQIHKFDKQKL), identical to the related rat and mouse sequences.

Purification

Immunogen affinity purified.

Cross Reactivity

No cross reactivity with other proteins

Storage

At -20°C for one year. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for a longer time. Avoid repeated freezing and thawing.

Sequence Similarities

Belongs to the protein kinase superfamily. Ser/Thr protein kinase family. I-kappa-B kinase subfamily.

Anti-NAK 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: 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). 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, IKKBK 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). Phosphorylates and activates AKT1 (PubMed:21464307). 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). 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

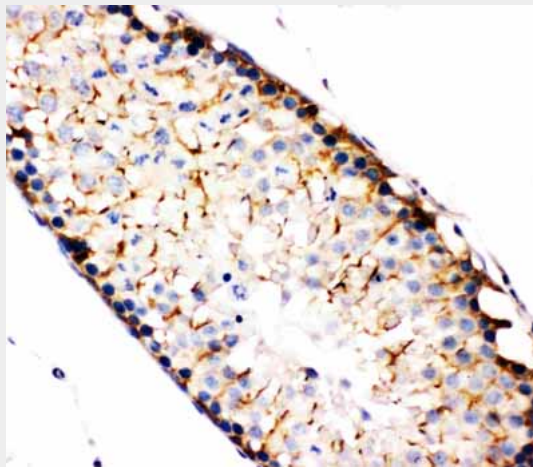
Ubiquitous with higher expression in testis. Expressed in the ganglion cells, nerve fiber layer and microvasculature of the retina.

Anti-NAK Antibody - Protocols

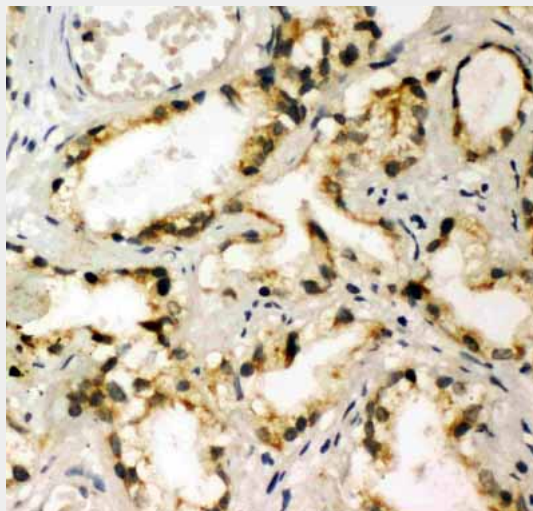
Provided below are standard protocols that you may find useful for product applications.

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

Anti-NAK Antibody - Images



Anti-NAK antibody, ABO11424, IHC(P)IHC(P): Rat Testis Tissue



Anti-NAK antibody, ABO11424, IHC(P)IHC(P): Human Prostatic Cancer Tissue



Anti-NAK antibody, ABO11424, Western blotting All lanes: Anti TBK1 (ABO11424) at 0.5ug/ml
Lane 1: HEK293T Whole Cell Lysate at 40ug
Lane 2: Rat Testis Tissue Lysate at 50ug
Lane 3: Rat Liver Tissue Lysate at 50ug
Predicted bind size: 84KD
Observed bind size: 100KD

Anti-NAK Antibody - Background

Serine/threonine-protein kinase TBK1, also called TANK-binding kinase 1 or NF-kappa-B-activating kinase is an enzyme that in humans is encoded by the TBK1 gene. The gene was assigned to human chromosome 12q14.2. Serine/threonine kinase plays an essential role in regulating inflammatory responses to foreign agents. TBK1 and NF-kappa-B signaling are essential in KRAS mutant tumors, and established a general approach for the rational identification of codependent pathways in cancer.