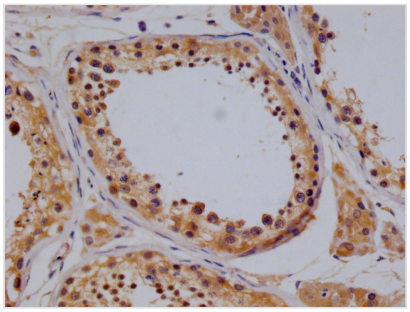
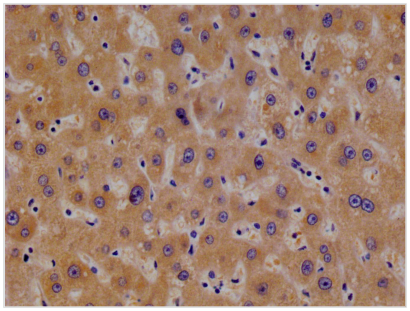
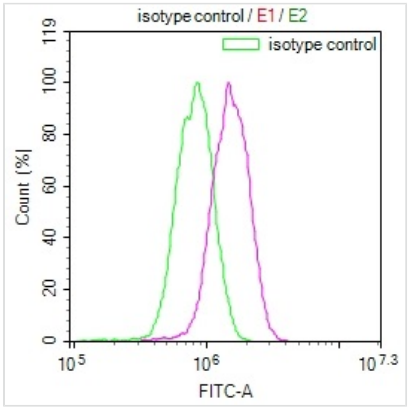
TBK1 Recombinant Monoclonal Antibody

Product Code	CSB-RA932866A0HU
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	Q9UHD2
Immunogen	A synthesized peptide derived from human TBK1
Species Reactivity	Human
Tested Applications	ELISA, IHC, FC; Recommended dilution: IHC:1:50-1:200, FC:1:50-1:200
Relevance	Serine/threonine kinase that plays an essential role in regulating inflammatory responses to foreign agents (PubMed:12692549, PubMed:14703513, PubMed:18583960, PubMed:12702806, PubMed:15367631, PubMed:10581243, PubMed:11839743, PubMed:15485837, PubMed:21138416, PubMed:25636800, PubMed:23453971, PubMed:23453972, PubMed:23746807, PubMed:26611359, PubMed:32404352). 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:14703513, PubMed:18583960, PubMed:12702806, PubMed:15367631, 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 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, wich 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). {ECO:0000250|UniProtKB:Q9WUN2, ECO:0000269|PubMed:10581243, ECO:0000269|PubMed:10783893, ECO:0000269|PubMed:11839743, ECO:0000269|PubMed:12692549, ECO:0000269|PubMed:12702806, ECO:0000269|PubMed:14703513, ECO:0000269|PubMed:15367631, ECO:0000269|PubMed:15485837, ECO:0000269|PubMed:15489227, ECO:0000269|PubMed:16155125, ECO:0000269|PubMed:18583960, ECO:0000269|PubMed:21138416, ECO:0000269|PubMed:21270402, ECO:0000269|PubMed:21464307, ECO:0000269|PubMed:21617041, ECO:0000269|PubMed:21931631, ECO:0000269|PubMed:22851595, ECO:0000269|PubMed:23453971, ECO:0000269|PubMed:23453972, ECO:0000269|PubMed:23746807, ECO:0000269|PubMed:25636800, ECO:0000269|PubMed:26611359, ECO:0000269|PubMed:27103069, ECO:0000269|PubMed:30842653, ECO:0000269|PubMed:32972995}.
Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG
Clonality	Monoclonal
Product Type	Recombinant Antibody
Immunogen Species	Homo sapiens (Human)
Research Area	Epigenetics and Nuclear Signaling; Signal transduction
Gene Names	TBK1
Clone No.	14D10
Image	 IHC image of CSB-RA932866A0HU diluted at 1:100 and staining in paraffin-embedded human testis tissue performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4°C overnight. The primary is detected by a Goat anti-rabbit polymer IgG labeled by HRP and visualized using 0.05% DAB.



IHC image of CSB-RA932866A0HU diluted at 1:100 and staining in paraffin-embedded human liver cancer performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4°C overnight. The primary is detected by a Goat anti-rabbit polymer IgG labeled by HRP and visualized using 0.05% DAB.



Overlay Peak curve showing A549 cells stained with CSB-RA932866A0HU (red line) at 1:100. The cells were fixed in 4% formaldehyde and permeated by 0.2% TritonX-100. Then 10% normal goat serum to block non-specific protein-protein interactions followed by the antibody (1ug/1*10^6cells) for 45min at 4?. The secondary antibody used was FITC-conjugated Goat Anti-rabbit IgG(H+L) at 1:200 dilution for 35min at 4?.Control antibody (green line) was rabbit IgG (1ug/1*10^6cells) used under the same conditions. Acquisition of >10,000 events was performed.

Description

The creation of the TBK1 recombinant monoclonal antibody involves the following steps: 1. B cell isolation. Use a synthesized peptide derived from human TBK1 as the immunogen to ?induce an immune reaction and harvest B cells. 2. Gene cloning and vector construction. Extract total RNA from the harvested B cells. Convert the RNA into cDNA using reverse transcription. Amplify the TBK1 antibody genes using PCR with primers specific to the antibody constant regions. Clone the TBK1 antibody genes into an expression vector. 3. Vector transfection and recombinant antibody expression and purification. Transfect the expression vector containing the TBK1 antibody genes into host cells for antibody expression. Collect the cell culture supernatant and purify the TBK1 recombinant monoclonal antibody using affinity chromatography. 4. Antibody characterization and validation. Analyze the purified TBK1 recombinant monoclonal antibody using ELISA, IHC, and FC to confirm its specificity and functionality. It can react with human TBK1 protein.