

**TXK Antibody (N-term) Blocking Peptide**  
**Synthetic peptide**  
**Catalog # BP7723a****Specification**

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**TXK Antibody (N-term) Blocking Peptide - Product Information**Primary Accession  
Other Accession[P42681](#)  
[TXK\\_HUMAN](#)**TXK Antibody (N-term) Blocking Peptide - Additional Information****Gene ID** 7294**Other Names**

Tyrosine-protein kinase TXK, Protein-tyrosine kinase 4, Resting lymphocyte kinase, TXK, PTK4, RLK

**Target/Specificity**

The synthetic peptide sequence used to generate the antibody [AP7723a](/product/products/AP7723a) was selected from the N-term region of human TXK. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

**Format**

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

**Precautions**

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

**TXK Antibody (N-term) Blocking Peptide - Protein Information****Name** TXK**Synonyms** PTK4, RLK**Function**

Non-receptor tyrosine kinase that plays a redundant role with ITK in regulation of the adaptive immune response. Regulates the development, function and differentiation of conventional T-cells and nonconventional NKT-cells. When antigen presenting cells (APC) activate T-cell receptor (TCR), a series of phosphorylation leads to the recruitment of TXK to the cell membrane, where it is phosphorylated at Tyr-420. Phosphorylation leads to TXK full activation. Contributes also to signaling from many receptors and participates in multiple downstream pathways, including regulation of the actin cytoskeleton. Like ITK, can phosphorylate PLCG1, leading to its localization in lipid rafts and activation, followed by subsequent cleavage of its substrates. In turn, the endoplasmic reticulum releases calcium in the cytoplasm and the nuclear activator of activated

T-cells (NFAT) translocates into the nucleus to perform its transcriptional duty. Plays a role in the positive regulation of IFNG transcription in T-helper 1 cells as part of an IFNG promoter-binding complex with PARP1 and EEF1A1 (PubMed: [11859127](http://www.uniprot.org/citations/11859127) target="\_blank">11859127</a>, PubMed: [17177976](http://www.uniprot.org/citations/17177976) target="\_blank">17177976</a>). Within the complex, phosphorylates both PARP1 and EEF1A1 (PubMed: [17177976](http://www.uniprot.org/citations/17177976) target="\_blank">17177976</a>). Phosphorylates also key sites in LCP2 leading to the up-regulation of Th1 preferred cytokine IL-2. Phosphorylates 'Tyr-201' of CTLA4 which leads to the association of PI-3 kinase with the CTLA4 receptor.

#### **Cellular Location**

Cytoplasm. Nucleus. Cell membrane; Peripheral membrane protein. Note=Localizes in the vicinity of cell surface receptors in the plasma membrane after receptor stimulation Translocates into the nucleus and enhances IFN-gamma gene transcription in T-cells

#### **Tissue Location**

Expressed in T-cells and some myeloid cell lines. Expressed in Th1/Th0 cells with IFN-gamma-producing potential

### **TXK Antibody (N-term) Blocking Peptide - Protocols**

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

- [Blocking Peptides](#)

### **TXK Antibody (N-term) Blocking Peptide - Images**

### **TXK Antibody (N-term) Blocking Peptide - Background**

Protein kinases are enzymes that transfer a phosphate group from a phosphate donor, generally the  $\gamma$  phosphate of ATP, onto an acceptor amino acid in a substrate protein. By this basic mechanism, protein kinases mediate most of the signal transduction in eukaryotic cells, regulating cellular metabolism, transcription, cell cycle progression, cytoskeletal rearrangement and cell movement, apoptosis, and differentiation. With more than 500 gene products, the protein kinase family is one of the largest families of proteins in eukaryotes. The family has been classified in 8 major groups based on sequence comparison of their tyrosine (PTK) or serine/threonine (STK) kinase catalytic domains. The STE group (homologs of yeast Sterile 7, 11, 20 kinases) consists of 50 kinases related to the mitogen-activated protein kinase (MAPK) cascade families (Ste7/MAP2K, Ste11/MAP3K, and Ste20/MAP4K). MAP kinase cascades, consisting of a MAPK and one or more upstream regulatory kinases (MAPKKs) have been best characterized in the yeast pheromone response pathway. Pheromones bind to Ste cell surface receptors and activate yeast MAPK pathway.

### **TXK Antibody (N-term) Blocking Peptide - References**

Takeba, Y., et al., J. Immunol. 168(5):2365-2370 (2002). Spritz, R.A., et al., Genomics 22(2):431-436 (1994). Haire, R.N., et al., Hum. Mol. Genet. 3(6):897-901 (1994).