

Anti-BTK Picoband Antibody
Catalog # ABO11835**Specification**

Anti-BTK Picoband Antibody - Product Information

Application	WB, IHC
Primary Accession	Q06187
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

Description

Rabbit IgG polyclonal antibody for Tyrosine-protein kinase BTK(BTK) 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-BTK Picoband Antibody - Additional Information

Gene ID 695

Other Names

Tyrosine-protein kinase BTK, 2.7.10.2, Agammaglobulinemia tyrosine kinase, ATK, B-cell progenitor kinase, BPK, Bruton tyrosine kinase, BTK, AGMX1, ATK, BPK

Calculated MW

76281 MW KDa

Application Details

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

Subcellular Localization

Cytoplasm. Cell membrane; Peripheral membrane protein. Nucleus. In steady state, BTK is predominantly cytosolic. Following B-cell receptor (BCR) engagement by antigen, translocates to the plasma membrane through its PH domain. Plasma membrane localization is a critical step in the activation of BTK. A fraction of BTK also shuttles between the nucleus and the cytoplasm, and nuclear export is mediated by the nuclear export receptor CRM1.

Tissue Specificity

Predominantly expressed in B-lymphocytes.

Protein Name

Tyrosine-protein kinase BTK

Contents

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na₂HPO₄, 0.05mg Na₃.

Immunogen

E.coli-derived human BTK recombinant protein (Position: A2-P340). Human BTK shares 98% amino acid (aa) sequence identity with mouse BTK.

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. Tyr protein kinase family. TEC subfamily.

Anti-BTK Picoband Antibody - Protein Information**Name** BTK**Synonyms** AGMX1, ATK, BPK**Function**

Non-receptor tyrosine kinase indispensable for B lymphocyte development, differentiation and signaling (PubMed: [19290921](http://www.uniprot.org/citations/19290921)). Binding of antigen to the B-cell antigen receptor (BCR) triggers signaling that ultimately leads to B-cell activation (PubMed: [19290921](http://www.uniprot.org/citations/19290921)). After BCR engagement and activation at the plasma membrane, phosphorylates PLCG2 at several sites, igniting the downstream signaling pathway through calcium mobilization, followed by activation of the protein kinase C (PKC) family members (PubMed: [11606584](http://www.uniprot.org/citations/11606584)). PLCG2 phosphorylation is performed in close cooperation with the adapter protein B-cell linker protein BLNK (PubMed: [11606584](http://www.uniprot.org/citations/11606584)). BTK acts as a platform to bring together a diverse array of signaling proteins and is implicated in cytokine receptor signaling pathways (PubMed: [16517732](http://www.uniprot.org/citations/16517732), PubMed: [17932028](http://www.uniprot.org/citations/17932028)). Plays an important role in the function of immune cells of innate as well as adaptive immunity, as a component of the Toll-like receptors (TLR) pathway (PubMed: [16517732](http://www.uniprot.org/citations/16517732)). The TLR pathway acts as a primary surveillance system for the detection of pathogens and are crucial to the activation of host defense (PubMed: [16517732](http://www.uniprot.org/citations/16517732)). Especially, is a critical molecule in regulating TLR9 activation in splenic B-cells (PubMed: [16517732](http://www.uniprot.org/citations/16517732), PubMed: [17932028](http://www.uniprot.org/citations/17932028)). Within the TLR pathway, induces tyrosine phosphorylation of TIRAP which leads to TIRAP degradation (PubMed: [16415872](http://www.uniprot.org/citations/16415872)). BTK also plays a critical role in transcription regulation (PubMed: [19290921](http://www.uniprot.org/citations/19290921)). Induces the activity of NF- κ B, which is involved in regulating the expression of hundreds of genes (PubMed: [19290921](http://www.uniprot.org/citations/19290921)).

BTK is involved on the signaling pathway linking TLR8 and TLR9 to NF-kappa-B (PubMed:19290921). Acts as an activator of NLRP3 inflammasome assembly by mediating phosphorylation of NLRP3 (PubMed:34554188). Transiently phosphorylates transcription factor GTF2I on tyrosine residues in response to BCR (PubMed:9012831). GTF2I then translocates to the nucleus to bind regulatory enhancer elements to modulate gene expression (PubMed:9012831). ARID3A and NFAT are other transcriptional target of BTK (PubMed:16738337). BTK is required for the formation of functional ARID3A DNA-binding complexes (PubMed:16738337). There is however no evidence that BTK itself binds directly to DNA (PubMed:16738337). BTK has a dual role in the regulation of apoptosis (PubMed:9751072).

Cellular Location

Cytoplasm. Cell membrane; Peripheral membrane protein. Nucleus Membrane raft {ECO:0000250|UniProtKB:P35991}. Note=In steady state, BTK is predominantly cytosolic. Following B-cell receptor (BCR) engagement by antigen, translocates to the plasma membrane through its PH domain Plasma membrane localization is a critical step in the activation of BTK. A fraction of BTK also shuttles between the nucleus and the cytoplasm, and nuclear export is mediated by the nuclear export receptor CRM1.

Tissue Location

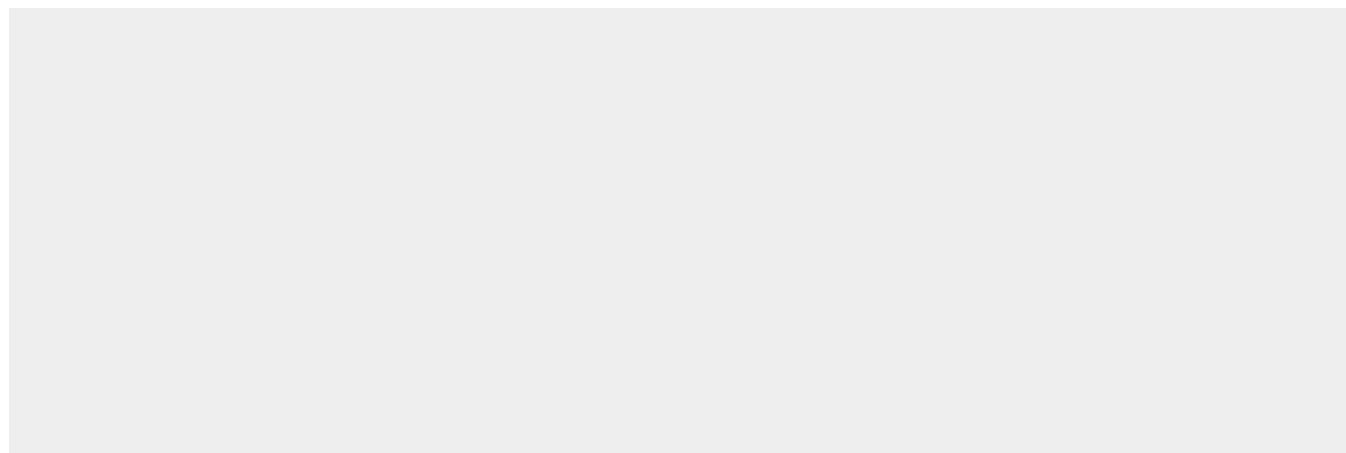
Predominantly expressed in B-lymphocytes.

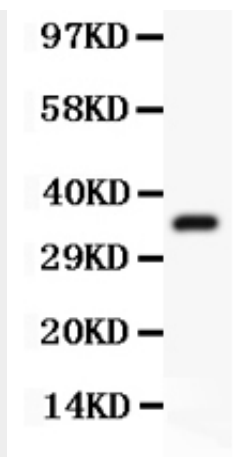
Anti-BTK Picoband Antibody - Protocols

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

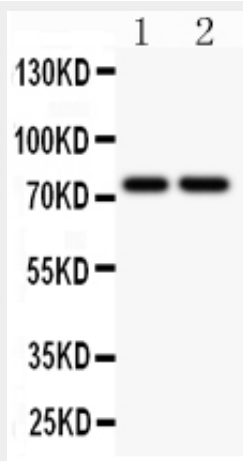
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

Anti-BTK Picoband Antibody - Images

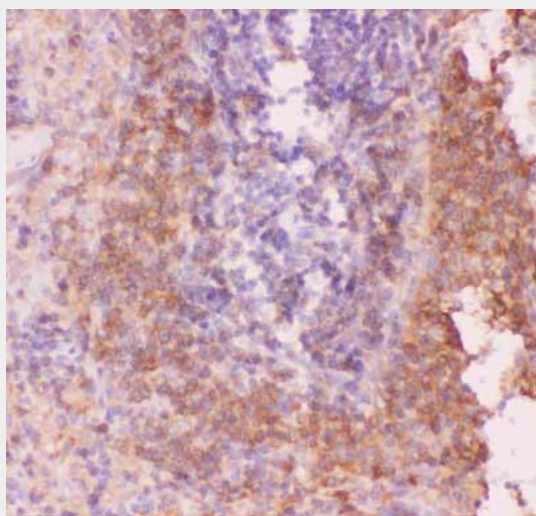




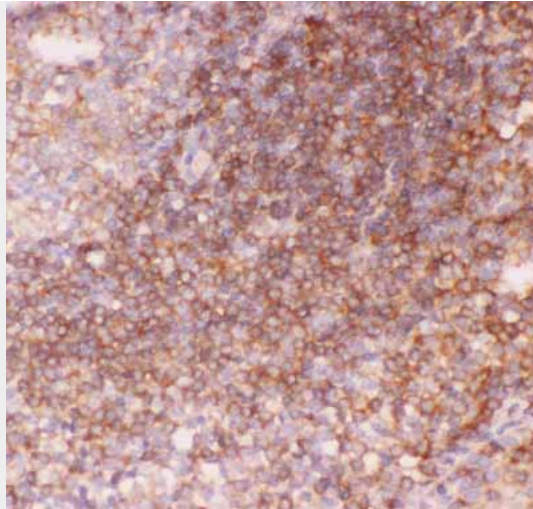
Anti-BTK Picoband antibody, ABO11835-1.jpg All lanes: Anti BTK (ABO11835) at 0.5ug/ml WB: Recombinant Human BTK Protein 0.5ng Predicted bind size: 36KD Observed bind size: 36KD



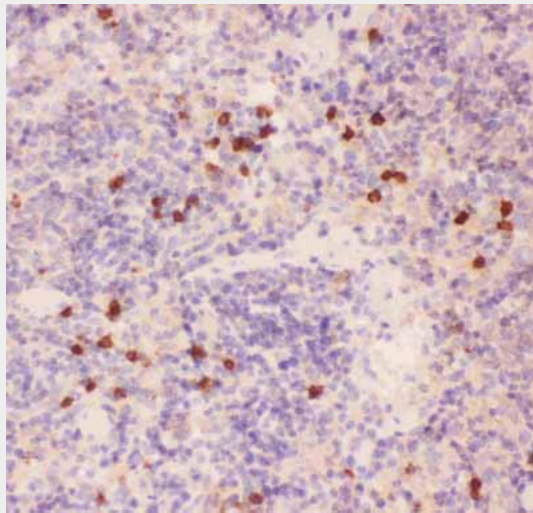
Anti-BTK Picoband antibody, ABO11835-2.jpg All lanes: Anti BTK (ABO11835) at 0.5ug/ml Lane 1: HEPG2 Whole Cell Lysate at 40ug Lane 2: K562 Whole Cell Lysate at 40ug Predicted bind size: 76KD Observed bind size: 76KD



Anti-BTK Picoband antibody, ABO11835-3.JPG IHC(P): Rat Spleen Tissue



Anti-BTK Picoband antibody, ABO11835-4.JPGIHC(P): Human Tonsil Tissue



Anti-BTK Picoband antibody, ABO11835-5.JPGIHC(P): Mouse Spleen Tissue

Anti-BTK Picoband Antibody - Background

BTK, also known as Bruton's tyrosine kinase, is an enzyme that in humans is encoded by the BTK gene. It is mapped to Xq22.1. BTK plays a crucial role in B cell maturation as well as mast cell activation through the high-affinity IgE receptor. BTK contains a PH domain that binds phosphatidylinositol (3,4,5)-trisphosphate (PIP3). PIP3 binding induces BTK to phosphorylate phospholipase C, which in turn hydrolyzes PIP2, a phosphatidylinositol, into two second messengers, inositol triphosphate (IP3) and diacylglycerol (DAG), which then go on to modulate the activity of downstream proteins during B-cell signalling. This gene also regulates both TLR9 activation and expression in B lymphocytes and is necessary for inhibitory cytokine expression.