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Tel: 858.875.1900 Fax: 858.875.1999

Anti-BTK Picoband Antibody

Catalog # ABO11835

Specification

Anti-BTK Picoband Antibody - Product Information

Application	**WB, IHC-P**
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 NaN3.

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 r˚Constitution, 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). Binding of antigen to the B-cell antigen receptor (BCR) triggers signaling that ultimately leads to B-cell activation (PubMed: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). PLCG2 phosphorylation is performed in close cooperation with the adapter protein B-cell linker protein BLNK (PubMed: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, PubMed: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). 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). Especially, is a critical molecule in regulating TLR9 activation in splenic B-cells (PubMed:16517732, PubMed:17932028). Within the TLR pathway, induces tyrosine phosphorylation of TIRAP which leads to TIRAP degradation (PubMed:16415872). BTK also plays a critical role in transcription regulation (PubMed:19290921). Induces the activity of NF- kappa-B, which is involved in regulating the expression of hundreds of genes (PubMed: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). Plays a role in STING1- mediated induction of type I interferon (IFN) response by phosphorylating DDX41 (PubMed:25704810).

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 Cytomety
- Cell Culture

Anti-BTK Picoband Antibody - Images

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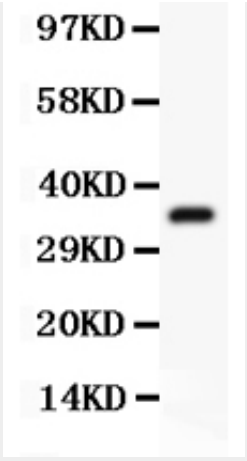
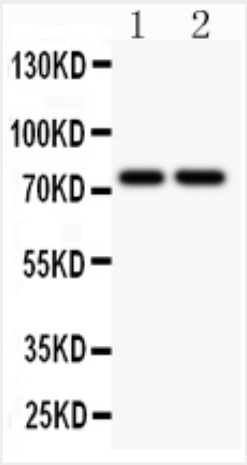
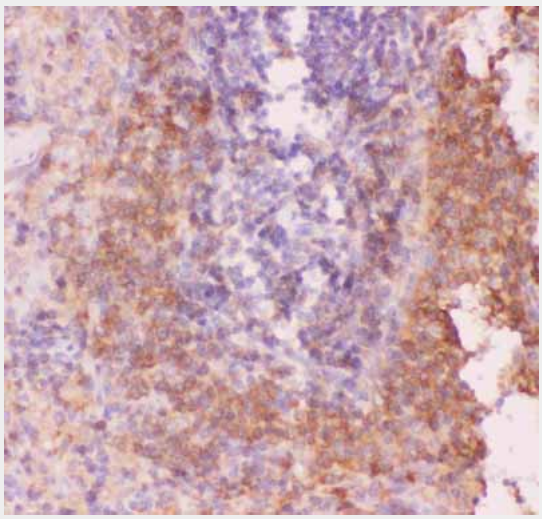


Anti-BTK Picoband antibody, ABO11835-1.jpgAll lanes: Anti BTK (ABO11835) at 0.5ug/mlWB: Recombinant Human BTK Protein 0.5ngPredicted bind size: 36KDObserved bind size: 36KD



Anti-BTK Picoband antibody, ABO11835-2.jpgAll lanes: Anti BTK (ABO11835) at 0.5ug/mlLane 1: HEPG2 Whole Cell Lysate at 40ugLane 2: K562 Whole Cell Lysate at 40ugPredicted bind size: 76KD Observed bind size: 76KD



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

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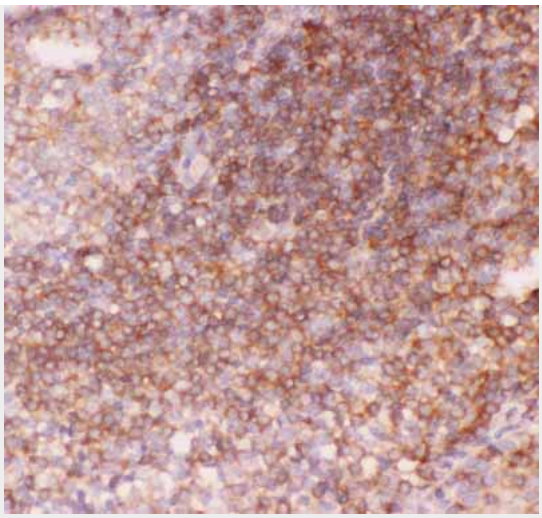
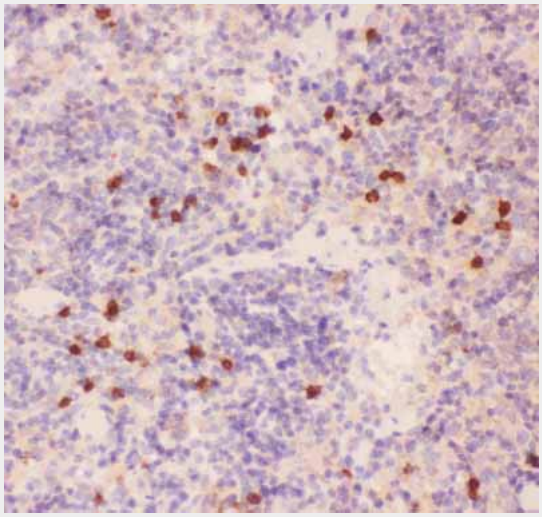


Anti-BTK Picoband antibody, ABO11835-4.JPGIHC(P): Human Tonsil Tissue



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.