

BTK Antibody
Mouse Monoclonal Antibody
Catalog # ALS15184**Specification**

BTK Antibody - Product Information

Application	WB
Primary Accession	Q06187
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Calculated MW	76kDa KDa

BTK 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

Reconstitution & Storage

Long term: -20°C; Short term: -20°C

Precautions

BTK Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

BTK 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:16517732).

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

Volume

50 μ l

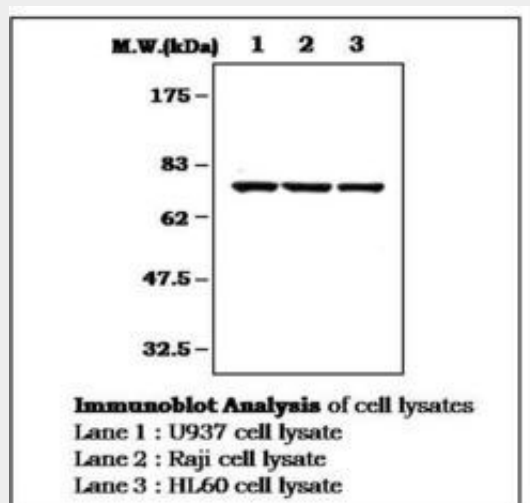
BTK Antibody - Protocols

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](#)

BTK Antibody - Images



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BTK Antibody - Background

Non-receptor tyrosine kinase indispensable for B lymphocyte development, differentiation and signaling. Binding of antigen to the B-cell antigen receptor (BCR) triggers signaling that ultimately leads to B-cell activation. 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. PLCG2 phosphorylation is performed in close cooperation with the adapter protein B-cell linker protein BLNK. BTK acts as a platform to bring together a diverse array of signaling proteins and is implicated in cytokine receptor signaling pathways. 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. The TLR pathway acts as a primary surveillance system for the detection of pathogens and are crucial to the activation of host defense. Especially, is a critical molecule in regulating TLR9 activation in splenic B-cells. Within the TLR pathway, induces tyrosine phosphorylation of TIRAP which leads to TIRAP degradation. BTK plays also a critical role in transcription regulation. Induces the activity of NF-kappa-B, which is involved in regulating the expression of hundreds of genes. BTK is involved on the signaling pathway linking TLR8 and TLR9 to NF-kappa-B. Transiently phosphorylates transcription factor GTF2I on tyrosine residues in response to BCR. GTF2I then translocates to the nucleus to bind regulatory enhancer elements to modulate gene expression. ARID3A and NFAT are other transcriptional target of BTK. BTK is required for the formation of functional ARID3A DNA-binding complexes. There is however no evidence that BTK itself binds directly to DNA. BTK has a dual role in the regulation of apoptosis.

BTK Antibody - References

- Vetrie D.,et al.Nature 361:226-233(1993).
Vetrie D.,et al.Nature 364:362-362(1993).
Ohta Y.,et al.Proc. Natl. Acad. Sci. U.S.A. 91:9062-9066(1994).
Rohrer J.,et al.Immunogenetics 40:319-324(1994).
Hagemann T.L.,et al.Hum. Mol. Genet. 3:1743-1749(1994).

