

**Phospho-BTK (Y223) Antibody**  
**Rabbit mAb**  
**Catalog # AP90561****Specification****Phospho-BTK (Y223) Antibody - Product Information**

Application	WB, IP
Primary Accession	<a href="#">Q06187</a>
Reactivity	Rat
Clonality	Monoclonal

**Other Names**

Agammaglobulinaemia tyrosine kinase; AGMX1; ATK; B cell progenitor kinase; BPK; Bruton's tyrosine kinase; EC 2.7.10.2; kinase Btk; Kinase EMB;

Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	76281 Da

**Phospho-BTK (Y223) Antibody - Additional Information**

Purification	<b>Affinity-chromatography</b>
Immunogen	<b>A synthesized peptide derived from human Phospho-BTK (Y223)</b>
Description	<b>Defects in the Bruton tyrosine kinase (BTK) gene cause Agammaglobulinemia. Agammaglobulinemia is an X-linked immunodeficiency characterized by failure to produce mature B lymphocyte cells and associated with a failure of Ig heavy chain rearrangement.</b>
Storage Condition and Buffer	<b>Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.</b>

**Phospho-BTK (Y223) Antibody - Protein Information****Name** BTK**Synonyms** AGMX1, ATK, BPK**Function**

Non-receptor tyrosine kinase indispensable for B lymphocyte development, differentiation and signaling (PubMed:<a href="http://www.uniprot.org/citations/19290921" target="\_blank">19290921</a>). Binding of antigen to the B-cell antigen receptor (BCR) triggers signaling that ultimately leads to B-cell activation (PubMed:<a href="http://www.uniprot.org/citations/19290921" target="\_blank">19290921</a>). 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:<a href="http://www.uniprot.org/citations/11606584" target="\_blank">11606584</a>). PLCG2 phosphorylation is performed in close cooperation with the adapter protein B-cell linker protein BLNK (PubMed:<a href="http://www.uniprot.org/citations/11606584" target="\_blank">11606584</a>). BTK acts as a platform to bring together a diverse array of signaling proteins and is implicated in cytokine receptor signaling pathways (PubMed:<a href="http://www.uniprot.org/citations/16517732" target="\_blank">16517732</a>, PubMed:<a href="http://www.uniprot.org/citations/17932028" target="\_blank">17932028</a>). 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:<a href="http://www.uniprot.org/citations/16517732" target="\_blank">16517732</a>). The TLR pathway acts as a primary surveillance system for the detection of pathogens and are crucial to the activation of host defense (PubMed:<a href="http://www.uniprot.org/citations/16517732" target="\_blank">16517732</a>). Especially, is a critical molecule in regulating TLR9 activation in splenic B-cells (PubMed:<a href="http://www.uniprot.org/citations/16517732" target="\_blank">16517732</a>, PubMed:<a href="http://www.uniprot.org/citations/17932028" target="\_blank">17932028</a>). Within the TLR pathway, induces tyrosine phosphorylation of TIRAP which leads to TIRAP degradation (PubMed:<a href="http://www.uniprot.org/citations/16415872" target="\_blank">16415872</a>). BTK also plays a critical role in transcription regulation (PubMed:<a href="http://www.uniprot.org/citations/19290921" target="\_blank">19290921</a>). Induces the activity of NF- kappa-B, which is involved in regulating the expression of hundreds of genes (PubMed:<a href="http://www.uniprot.org/citations/19290921" target="\_blank">19290921</a>). BTK is involved on the signaling pathway linking TLR8 and TLR9 to NF-kappa-B (PubMed:<a href="http://www.uniprot.org/citations/19290921" target="\_blank">19290921</a>). Acts as an activator of NLRP3 inflammasome assembly by mediating phosphorylation of NLRP3 (PubMed:<a href="http://www.uniprot.org/citations/34554188" target="\_blank">34554188</a>). Transiently phosphorylates transcription factor GTF2I on tyrosine residues in response to BCR (PubMed:<a href="http://www.uniprot.org/citations/9012831" target="\_blank">9012831</a>). GTF2I then translocates to the nucleus to bind regulatory enhancer elements to modulate gene expression (PubMed:<a href="http://www.uniprot.org/citations/9012831" target="\_blank">9012831</a>). ARID3A and NFAT are other transcriptional target of BTK (PubMed:<a href="http://www.uniprot.org/citations/16738337" target="\_blank">16738337</a>). BTK is required for the formation of functional ARID3A DNA-binding complexes (PubMed:<a href="http://www.uniprot.org/citations/16738337" target="\_blank">16738337</a>). There is however no evidence that BTK itself binds directly to DNA (PubMed:<a href="http://www.uniprot.org/citations/16738337" target="\_blank">16738337</a>). BTK has a dual role in the regulation of apoptosis (PubMed:<a href="http://www.uniprot.org/citations/9751072" target="\_blank">9751072</a>). Plays a role in STING1- mediated induction of type I interferon (IFN) response by phosphorylating DDX41 (PubMed:<a href="http://www.uniprot.org/citations/25704810" target="\_blank">25704810</a>).

### 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

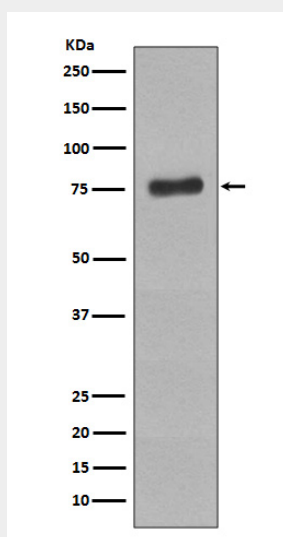
Predominantly expressed in B-lymphocytes.

### Phospho-BTK (Y223) 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](#)

#### **Phospho-BTK (Y223) Antibody - Images**



Western blot analysis of Phospho-BTK (Y223) expression in Raji cell lysate treated with pervanadate.