

# Phospho-BTK (Y551) Antibody

Rabbit mAb

Catalog # AP90731

## Product Information

<b>Application</b>	WB, IF, ICC
<b>Primary Accession</b>	<a href="#">Q06187</a>
<b>Reactivity</b>	Human
<b>Clonality</b>	Monoclonal
<b>Other Names</b>	BTK, AGMX1, AT, ATK, XLA, PSCTK1, B-cell progenitor kinase, BPK, Bruton tyrosine kinase, Tyrosine-protein kinase BTK, IMD1;
<b>Isotype</b>	Rabbit IgG
<b>Host</b>	Rabbit
<b>Calculated MW</b>	76281

## Additional Information

<b>Dilution</b>	WB 1:500~1:2000 ICC/IF 1:50~1:200
<b>Purification</b>	Affinity-chromatography
<b>Immunogen</b>	A synthesized peptide derived from human Phospho-BTK (Y551)
<b>Description</b>	Bruton's tyrosine kinase (Btk) is a member of the Btk/Tec family of cytoplasmic tyrosine kinases. Like other Btk family members, it contains a pleckstrin homology (PH) domain and Src homology SH3 and SH2 domains. Btk plays an important role in B cell development. Activation of B cells by various ligands is accompanied by Btk membrane translocation mediated by its PH domain binding to phosphatidylinositol-3,4,5-trisphosphate.
<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.

## Protein Information

<b>Name</b>	BTK
<b>Synonyms</b>	AGMX1, ATK, BPK
<b>Function</b>	Non-receptor tyrosine kinase indispensable for B lymphocyte development, differentiation and signaling (PubMed: <a href="#">19290921</a> ). Binding of antigen to the B-cell antigen receptor (BCR) triggers signaling that ultimately leads to B-cell activation (PubMed: <a href="#">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="#">11606584</a> ). PLCG2 phosphorylation is performed in close cooperation with the adapter protein B-cell linker protein BLNK (PubMed: <a href="#">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:[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](#)).

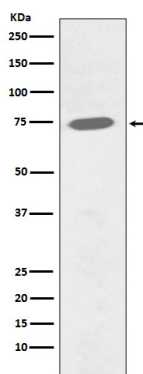
#### Cellular Location

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.

## Images



Western blot analysis of Phospho-BTK (Y551) expression in Ramos cell lysate treated with Pervanadate.

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