

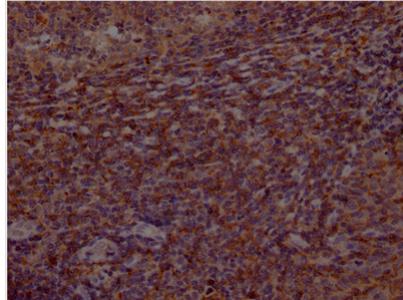


BTK Recombinant Monoclonal Antibody

Product Code	CSB-RA553167A0HU
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	Q06187
Immunogen	A synthesized peptide derived from human BTK
Species Reactivity	Human
Tested Applications	ELISA, IHC; Recommended dilution: IHC:1:50-1:200
Relevance	<p>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.</p>
Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG
Clonality	Monoclonal
Product Type	Recombinant Antibody



Immunogen Species	Homo sapiens (Human)
Research Area	Immunology; Signal transduction
Gene Names	BTK
Clone No.	3E5

Image


IHC image of CSB-RA553167A0HU diluted at 1:100 and staining in paraffin-embedded human tonsil tissue performed on a Leica Bond™ system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4? overnight. The primary is detected by a Goat anti-rabbit IgG polymer labeled by HRP and visualized using 0.05% DAB.

Description

To create the BTK recombinant monoclonal antibody, multiple intricate steps are involved. The process commences with the extraction of the BTK monoclonal antibody and the sequencing of its genetic code. After that, a vector containing the BTK monoclonal antibody gene is constructed and transfected into a host cell line for culture purposes. A synthesized peptide derived from human BTK is used to initiate the production of BTK monoclonal antibodies. The resulting BTK recombinant monoclonal antibody undergoes purification through affinity chromatography to ensure high purity. Finally, this antibody is validated through ELISA and IHC assays to confirm its ability to recognize BTK. It only detects human BTK protein.

BTK is a non-receptor tyrosine kinase that plays a key role in B-cell development and activation. BTK is required for normal B-cell development and maturation. BTK deficiency causes a rare genetic disorder known as X-linked agammaglobulinemia (XLA), in which affected individuals lack mature B cells and are unable to produce immunoglobulins, which are critical for humoral immunity. BTK is also involved in the signaling pathways that regulate B-cell activation in response to antigen stimulation. Upon binding of antigens to the BCR, BTK is activated and initiates downstream signaling pathways that lead to B-cell proliferation, differentiation, and antibody production. BTK plays a role in various immune responses, including the production of cytokines and chemokines, and the recruitment of immune cells to sites of inflammation. Dysregulation of BTK expression or function has been implicated in the development and progression of various types of cancer, including B-cell malignancies.