Recombinant BTK protein

Catalog No: 81083, 81783
Lot No: 20917001
Expressed In: Baculovirus

Quantity: 20, 1000 µg
Concentration: 0.5 µg/µl
Source: Human

Buffer Contents: Recombinant BTK protein is in 25 mM HEPES-NaOH pH 7.5, 300 mM NaCl, 10% glycerol, 0.04% Triton X-100 and 0.5 mM TCEP.

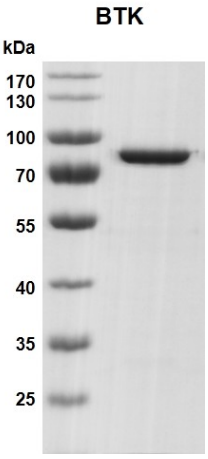
Background: BTK (Bruton Tyrosine Kinase), also known as B-Cell Progenitor Kinase, EC 2.7.10.2, AGMX1, ATK, BPK, is a non-receptor tyrosine kinase indispensable for B lymphocyte development, differentiation and signaling. It acts as a platform to bring together a diverse array of signaling proteins and is implicated in cytokine receptor signaling pathways. . 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, BTK can phosphorylate PLCG2 at several sites, igniting the downstream signaling pathway through calcium mobilization, followed by activation of the protein kinase C (PKC) family members. It also 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.

BTK can be activated by phosphorylation. In primary B lymphocytes, it is almost always non-phosphorylated and is thus catalytically inactive. Stimulation of TLR8 and TLR9 causes BTK activation. As a negative feedback mechanism to fine-tune BCR signaling, activated PRKCB down-modulates BTK function via direct phosphorylation of BTK at Ser -180, resulting in translocation of BTK back to the cytoplasmic fraction. PIN1, SH3BP5, and IBTK were also identified as BTK activity inhibitors. Interaction with CAV1 leads to dramatic down-regulation of the kinase activity of BTK. LFM -13A is a specific inhibitor of BTK.

Protein Details: Recombinant human BTK protein was expressed in a baculovirus expression system as the full length protein (accession number NP_000052.1) with an N-terminal FLAG tag. The molecular weight of the protein is 77.6 kDa.

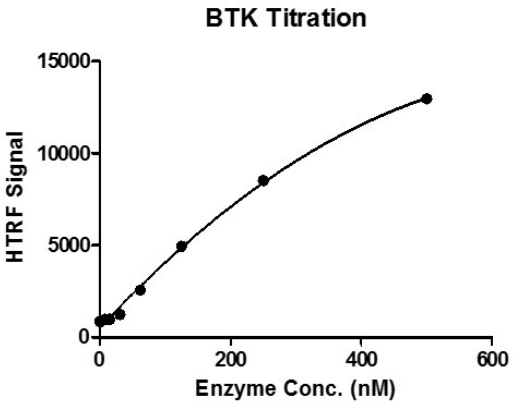
Application Notes: Recombinant BTK protein is suitable for use in the study of enzyme kinetics, inhibitor screening, and selectivity profiling.

Storage and Guarantee: Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is for research use only and is not for use in diagnostic procedures. This product is guaranteed for 6 months from date of arrival.



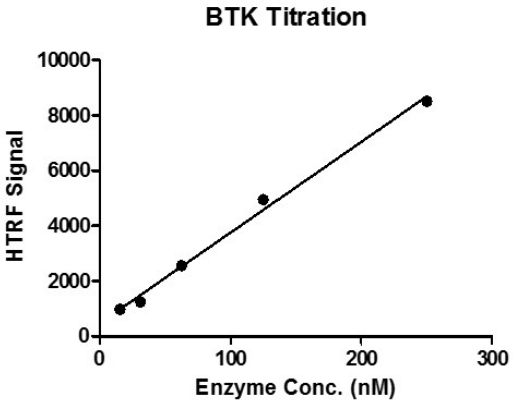
Recombinant BTK protein gel

10% SDS-PAGE Coomassie staining
MW: 77.6 kDa
Purity: ≥ 95%



HTRF assay for BTK activity

1 µM TK substrate was incubated with different concentrations of BTK protein in 10 µl reaction system containing 1×Enzymatic Buffer, 5 mM MgCl2, 1 mM DTT, 5 nM SEB and 100 µM ATP for 1 hour. The detection reagents were added and incubated with the reactions for 1 hr. All operations and reactions were performed at room temperature, and HTRF KinASE TK assay was used to detect the enzymatic activity.



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