SANTA CRUZ BIOTECHNOLOGY, INC.

# Btk (7F12H4): sc-81159

## BACKGROUND

The Tec family of non-receptor tyrosine kinases is composed of six proteins designated Tec, Emt (also known as Itk or Tsk), Btk (previously known as Atk, BPK or Emb), Bmx, Txk (also known as Rlk) and Dsrc28C. All members of the family contain SH3 and SH2 domains and, with the exception of Txk and Dsrc28C, also contain a Pleckstrin homology (PH) and a Tec homology (TH) domain in their amino-termini. Four alternatively spliced forms of Tec are found to be expressed broadly in cells of hematopoietic lineage and hepatocytes. The Emt gene product associates with CD28 and becomes activated subsequent to CD28 ligation. Btk is necessary for proper B cell development, and mutations in the gene encoding Btk have been associated with families suffering from X-linked agammaglobulinemia, also referred to as Bruton's disease. The Bmx protein shares a high degree of homology with Btk and seems to be expressed at highest levels in the heart. Txk expression is T cell specific, while expression of the *Drosophila* Tec homolog, Dsrc28C, is developmentally regulated.

## CHROMOSOMAL LOCATION

Genetic locus: BTK (human) mapping to Xq22.1; Btk (mouse) mapping to X E3.

## SOURCE

Btk (7F12H4) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 459-659 of Btk of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Btk (7F12H4) is available conjugated to agarose (sc-81159 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-81159 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-81159 PE), fluorescein (sc-81159 FITC), Alexa Fluor® 488 (sc-81159 AF488), Alexa Fluor® 546 (sc-81159 AF546), Alexa Fluor® 594 (sc-81159 AF594) or Alexa Fluor® 647 (sc-81159 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-81159 AF680) or Alexa Fluor® 790 (sc-81159 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

Btk (7F12H4) is recommended for detection of Btk of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Btk siRNA (h): sc-29841, Btk siRNA (m): sc-29842, Btk shRNA Plasmid (h): sc-29841-SH, Btk shRNA Plasmid (m): sc-29842-SH, Btk shRNA (h) Lentiviral Particles: sc-29841-V and Btk shRNA (m) Lentiviral Particles: sc-29842-V.

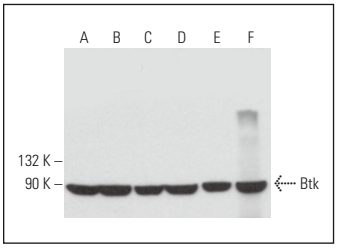
Molecular Weight of Btk: 77 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, MCF7 whole cell lysate: sc-2206 or Jurkat whole cell lysate: sc-2204.

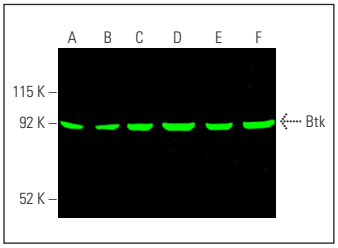
## STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA




Btk (7F12H4): sc-81159. Western blot analysis of Btk expression in K-562 (**A**), Jurkat (**B**), RAW 264.7 (**C**), SP2/0 (**D**), IB4 (**E**) and CTLL-2 (**F**) whole cell lysates.




Btk (7F12H4): sc-81159. Near-Infrared western blot analysis of Btk expression in Jurkat (**A**), MCF7 (**B**), K-562 (**C**), U-698-M (**D**), MEG-01 (**E**) and NAMALWA (**F**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG Fc BP-CFL 680: sc-533657.

## SELECT PRODUCT CITATIONS


1. Zucha, M.A., et al. 2015. Bruton's tyrosine kinase (Btk) inhibitor ibrutinib suppresses stem-like traits in ovarian cancer. Oncotarget 6: 13255-13268.
2. Mata, E., et al. 2017. Analysis of the mutational landscape of classic Hodgkin lymphoma identifies disease heterogeneity and potential therapeutic targets. Oncotarget 8: 111386-111395.
3. Chang, Y.C., et al. 2020. Nonenzymatic function of Aldolase A downregulates miR-145 to promote the Oct4/DUSP4/TRAF4 axis and the acquisition of lung cancer stemness. Cell Death Dis. 11: 195.
4. Liu, S.C., et al. 2021. Inhibition of Bruton's tyrosine kinase as a therapeutic strategy for chemoresistant oral squamous cell carcinoma and potential suppression of cancer stemness. Oncogenesis 10: 20.
5. Kuo, K.T., et al. 2022. HNMT Upregulation induces cancer stem cell formation and confers protection against oxidative stress through interaction with HER2 in non-small-cell lung cancer. Int. J. Mol. Sci. 23: 1663.
6. Betzler, A.C., et al. 2023. Btk isoforms p80 and p65 are expressed in head and neck squamous cell carcinoma (HNSCC) and involved in tumor progression. Cancers 15: 310.
7. Setiawan, S.A., et al. 2023. Synergistic disruption of BTK and BCL-2 causes apoptosis while inducing ferroptosis in double-hit lymphoma. Eur. J. Pharmacol. 943: 175526.


## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.