

Btk (DFS): sc-81735



The Power to Question

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 (DFS) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 212-275 (SH3 domain) of Btk of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Btk (DFS) is available conjugated to either phycoerythrin (sc-81735 PE) or fluorescein (sc-81735 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

Btk (DFS) 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)] and flow cytometry (1 µg per 1 x 10⁶ cells).

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: NAMALWA cell lysate: sc-2234, U-698-M whole cell lysate: sc-364799 or K-562 whole cell lysate: sc-2203.

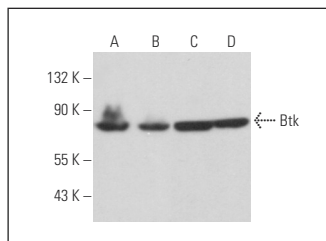
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

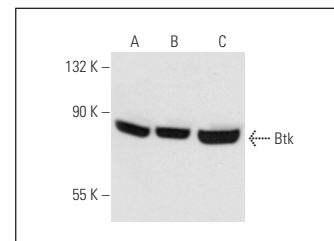
STORAGE

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

DATA



Btk (DFS): sc-81735. Western blot analysis of Btk expression in MEG-01 (A), BJAB (B), Raji (C) and K-562 (D) whole cell lysates.



Btk (DFS): sc-81735. Western blot analysis of Btk expression in K-562 (A), NAMALWA (B) and U-698-M (C) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Yamamoto, H., et al. 2016. Btk gene targeting by homologous recombination using a helper-dependent adenovirus/adeno-associated virus hybrid vector. *Gene Ther.* 23: 205-213.
2. Jiang, X., et al. 2019. Interplay between HGAL and Grb2 proteins regulates B-cell receptor signaling. *Blood Adv.* 3: 2286-2297.
3. Wist, M., et al. 2020. Non-catalytic Bruton's tyrosine kinase activates PLCγ2 variants mediating ibrutinib resistance in human chronic lymphocytic leukemia cells. *J. Biol. Chem.* 295: 5717-5736.
4. Sharma, M.D., et al. 2021. Inhibition of the Btk-IDO-mTOR axis promotes differentiation of monocyte-lineage dendritic cells and enhances anti-tumor T cell immunity. *Immunity* 54: 2354-2371.e8.
5. Lee, E.Y., et al. 2022. Glutamyl-prolyl-tRNA synthetase 1 coordinates early endosomal anti-inflammatory AKT signaling. *Nat. Commun.* 13: 6455.
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.

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.



See **Btk (E-9): sc-28387** for Btk antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.