

**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 (E-9) is a mouse monoclonal antibody raised against amino acids 1-391 of Btk of mouse origin.

**PRODUCT**

Each vial contains 200 µg IgG<sub>1</sub> lambda light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Btk (E-9) is available conjugated to agarose (sc-28387 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-28387 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-28387 PE), fluorescein (sc-28387 FITC), Alexa Fluor® 488 (sc-28387 AF488), Alexa Fluor® 546 (sc-28387 AF546), Alexa Fluor® 594 (sc-28387 AF594) or Alexa Fluor® 647 (sc-28387 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-28387 AF680) or Alexa Fluor® 790 (sc-28387 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

**APPLICATIONS**

Btk (E-9) is recommended for detection of Btk of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

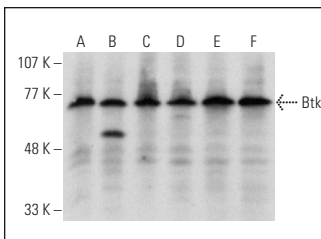
Suitable for use as control antibody for Btk siRNA (h): sc-29841, Btk siRNA (m): sc-29842, Btk shRNA Plasmid (h): sc-29841-SH, Btk shRNA Plasmid (m): sc-29842-SH, Btk shRNA (h) Lentiviral Particles: sc-29841-V and Btk shRNA (m) Lentiviral Particles: sc-29842-V.

Molecular Weight of Btk: 77 kDa.

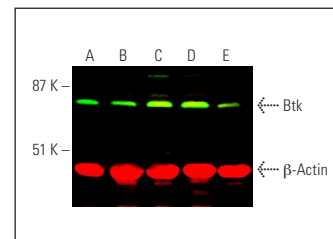
Positive Controls: MEG-01 cell lysate: sc-2283, NAMALWA cell lysate: sc-2234 or K-562 whole cell lysate: sc-2203.

**STORAGE**

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

**DATA**

Btk (E-9) HRP: sc-28387 HRP. Direct western blot analysis of Btk expression in K-562 (A), RAW 264.7 (B), MEG-01 (C), NAMALWA (D), BJAB (E) and U-698-M (F) whole cell lysates.



Simultaneous near-infrared western blot analysis of Btk expression, detected with Btk (E-9): sc-28387 and m-IgG<sub>λ</sub>. BP-CFL 680: sc-516194 and β-Actin expression, detected with β-Actin (C4): sc-47778 and m-IgG<sub>κ</sub>. BP-CFL 790: sc-516181 in MEG-01 (A), NAMALWA (B), BJAB (C), U-698-M (D) and K-562 (E) whole cell lysates.

**SELECT PRODUCT CITATIONS**

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- Rosati, A., et al. 2009. Identification of a Btk-BAG3 complex induced by oxidative stress. *Leukemia* 23: 823-824.
- Verma-Gaur, J., et al. 2012. Negative feedback regulation of antigen receptors through calmodulin inhibition of E2A. *J. Immunol.* 188: 6175-6183.
- Eifert, C., et al. 2013. A novel isoform of the B cell tyrosine kinase Btk protects breast cancer cells from apoptosis. *Genes Chromosomes Cancer* 52: 961-975.
- Guendel, I., et al. 2015. Role of Bruton's tyrosine kinase inhibitors in HIV-1-infected cells. *J. Neurovirol.* 21: 257-275.
- Badolia, R., et al. 2017. G<sub>q</sub> pathway regulates proximal C-type lectin-like receptor-2 (CLEC-2) signaling in platelets. *J. Biol. Chem.* 292: 14516-14531.
- Xu, X., et al. 2018. Phosphorylation-mediated IFN-γR2 membrane translocation is required to activate macrophage innate response. *Cell* 175: 1336-1351.
- Guo, F., et al. 2020. Recent Bcr stimulation induces a negative autoregulatory loop via FBXO10 mediated degradation of HGAL. *Leukemia* 34: 553-566.
- 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.

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