Revision 1

Store at -20C

#3537

Phospho-Btk (Ser180) (3D3) Mouse mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H	Endogenous	80	Mouse IgG1	#Q06187	695

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Phospho-Btk (Ser180) (3D3) Mouse mAb detects endogenous levels of Btk only when phosphorylated at Ser180.

Species predicted to react based on 100% sequence homology

Mouse

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues around Ser180 of human Btk.

Background

Bruton's tyrosine kinase (Btk) is a member of the Btk/Tec family of cytoplasmic tyrosine kinases. Like other Btk family members, it contains a pleckstrin homology (PH) domain and Src homology SH3 and SH2 domains. Btk plays an important role in B cell development (1,2). Activation of B cells by various ligands is accompanied by Btk membrane translocation mediated by its PH domain binding to phosphatidylinositol-3,4,5-trisphosphate (3-5). The membrane-localized Btk is active and associated with transient phosphorylation of two tyrosine residues, Tyr551 and Tyr223. Tyr551 in the activation loop is transphosphorylated by the Src family tyrosine kinases, leading to autophosphorylation at Tyr223 within the SH3 domain, which is necessary for full activation (6,7). The activation of Btk is negatively regulated by PKCβ through phosphorylation of Btk at Ser180, which results in reduced membrane recruitment, transphosphorylation, and subsequent activation (8). The PKC inhibitory signal is likely to be a key determinant of the B cell receptor signaling threshold to maintain optimal Btk activity (8).

Background References

1. Khan, W.N. (2001) *Immunol Res* 23, 147-56.
2. Lewis, C.M. et al. (2001) *Curr Opin Immunol* 13, 317-25.
3. Salim, K. et al. (1996) *EMBO J* 15, 6241-50.
4. Rameh, L.E. et al. (1997) *J Biol Chem* 272, 22059-66.
5. Várnai, P. et al. (1999) *J Biol Chem* 274, 10983-9.
6. Rawlings, D.J. et al. (1996) *Science* 271, 822-5.
7. Park, H. et al. (1996) *Immunity* 4, 515-25.
8. Kang, S.W. et al. (2001) *EMBO J* 20, 5692-702.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human

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