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Btk (D3H5) Rabbit mAb (Alexa Fluor® 647 Conjugate)



Cell Signaling
TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications: FC-FP	Reactivity: H M	Sensitivity: Endogenous	Source/Isotype: Rabbit IgG	UniProt ID: #Q06187	Entrez-Gene Id: 695
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Product Usage Information	Application Flow Cytometry (Fixed/Permeabilized)	Dilution 1:50
Storage	Supplied in PBS (pH 7.2), less than 0.1% sodium azide and 2 mg/ml BSA. Store at 4°C. Do not aliquot the antibody. Protect from light. Do not freeze.	
Specificity / Sensitivity	Btk (D3H5) Rabbit mAb (Alexa Fluor® 647 Conjugate) recognizes endogenous levels of total Btk protein.	
Species predicted to react based on 100% sequence homology:	Rat, Hamster, Bovine, Dog, Pig, Horse	
Source / Purification	Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Asp195 of human Btk protein.	
Product Description	This Cell Signaling Technology antibody is conjugated to Alexa Fluor® 647 fluorescent dye and tested in-house for direct flow cytometry and immunofluorescent analysis in human cells. The antibody is expected to exhibit the same species cross-reactivity as the unconjugated Btk (D3H5) Rabbit mAb #8547.	
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	<ol style="list-style-type: none"> 1. Khan, W.N. (2001) <i>Immunol Res</i> 23, 147-56. 2. Lewis, C.M. et al. (2001) <i>Curr Opin Immunol</i> 13, 317-25. 3. Salim, K. et al. (1996) <i>EMBO J</i> 15, 6241-50. 4. Rameh, L.E. et al. (1997) <i>J Biol Chem</i> 272, 22059-66. 5. Várnai, P. et al. (1999) <i>J Biol Chem</i> 274, 10983-9. 6. Rawlings, D.J. et al. (1996) <i>Science</i> 271, 822-5. 7. Park, H. et al. (1996) <i>Immunity</i> 4, 515-25. 8. Kang, S.W. et al. (2001) <i>EMBO J</i> 20, 5692-702. 	
Species Reactivity	Species reactivity is determined by testing in at least one approved application (e.g., western blot).	
Applications Key	FC-FP: Flow Cytometry (Fixed/Permeabilized)	
Cross-Reactivity Key	H: human M: mouse R: rat Hm: hamster Mk: monkey Vir: virus Mi: mink C: chicken Dm: D. melanogaster X: Xenopus Z: zebrafish B: bovine Dg: dog Pg: pig Sc: S. cerevisiae Ce: C. elegans Hr: horse GP: Guinea Pig Rab: rabbit All: all species expected	

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