Revision 3

Store at -20C

#13703

Phospho-DAPP1/BAM32 (Tyr139) (D7G4G) Rabbit mAb

Cell Signaling TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, W-S, IP	H	Endogenous	29	Rabbit IgG	#Q9UN19	27071

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Simple Western™	1:50 - 1:250
Immunoprecipitation	1:200

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-DAPP1/BAM32 (Tyr139) (D7G4G) Rabbit mAb recognizes endogenous levels of DAPP1/BAM32 protein only when phosphorylated at Tyr139.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr139 of human DAPP1/BAM32 protein.

Background

The dual adaptor of phosphotyrosine and 3-phosphoinositides (DAPP1/BAM32) is a cytoplasmic adaptor protein that mediates the recruitment and interaction of molecules required for signal transduction downstream of the B cell receptor (BCR) (1). The DAPP1/BAM32 protein contains an amino-terminal SH2 domain and a carboxy-terminal pleckstrin homology (PH) domain that binds to PI3K-derived phosphoinositides (i.e., PIP_3). Upon BCR activation, DAPP1/BAM32 is phosphorylated at specific tyrosine residues and translocated from the cytoplasm to the membrane. Research studies indicate that phosphorylation and translocation of DAPP1/BAM32 is strongly dependent upon PI3K signaling (2,3). The amino-terminal SH2 domain binds to PLCγ2 and other tyrosine-phosphorylated targets. As a result of these interactions, DAPP1/BAM32 can adjust the response to receptor activation by coordinating membrane-localized interactions among proteins of distinct signal transduction pathways (1,4). DAPP1/BAM32 is expressed most abundantly in B lymphocytes; high expression during dendritic cell (DC) maturation and localization to contact sites between DC and allogenic T cells suggest that the DAPP1/BAM32 adaptor may play a role in the activation of T cells through MHC class I-mediated signaling pathways (5).
Research studies show that phosphorylation of DAPP1/BAM32 at Tyr139 is PI3K-dependent, requires an intact PH domain in DAPP1/BAM32, and is likely performed by Src-family kinases following membrane recruitment of DAPP1/BAM32 by phosphoinositides (6). Blocking phosphorylation of DAPP1/BAM32 at Tyr139 inhibits BCR internalization and reduces cellular F-actin levels, suggesting that phosphorylation of DAPP1/BAM32 may play a role in regulating actin-dependent internalization of the activated BCR (7,8).

Background References

1. Marshall, A.J. et al. (2007) *Biochem Soc Trans* 35, 181-2.
2. Marshall, A.J. et al. (2000) *J Exp Med* 191, 1319-32.
3. Anderson, K.E. et al. (2000) *Curr Biol* 10, 1403-12.
4. Richards, S. et al. (2008) *Immunol Rev* 224, 183-200.
5. Ortner, D. et al. (2011) *J Immunol* 187, 3972-8.
6. Dowler, S. et al. (2000) *Biochem J* 349, 605-10.
7. Niiro, H. et al. (2004) *J Immunol* 173, 5601-9.
8. Allam, A. et al. (2004) *J Biol Chem* 279, 39775-82.

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 BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **W-S:** Simple Western™ **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human

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