

Phospho-14-3-3 ζ/δ (Ser58)/η (Ser59)/γ (Ser59)/β/α (Ser60) (E6B3G) Rabbit mAb

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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	H M R	Endogenous	28	Rabbit IgG	#P61981, #P31946, #Q04917, #P63104	7532, 7529, 7533, 7534

Product Usage Information**Application**

Western Blotting

Dilution

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-14-3-3 ζ/δ (Ser58)/η (Ser59)/γ (Ser59)/β/α (Ser60) (E6B3G) Rabbit mAb detects endogenous levels of 14-3-3 ζ/δ only when phosphorylated at Ser58, 14-3-3 η and 14-3-3 γ only when phosphorylated at Ser59, and 14-3-3 α/β only when phosphorylated at Ser60. This antibody does not cross-react with 14-3-3 ε, 14-3-3 θ, or 14-3-3 σ. This antibody also recognizes a non-specific band of unknown origin at 80 kDa and 180 kDa.

Species predicted to react based on 100% sequence homology

Monkey, Chicken, Bovine, Pig

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser58 of human 14-3-3 ζ/δ protein.

Background

The 14-3-3 family of proteins plays a key regulatory role in signal transduction, checkpoint control, apoptotic and nutrient-sensing pathways (1,2). 14-3-3 proteins are highly conserved and ubiquitously expressed. There are at least seven isoforms, β, γ, ε, σ, ζ, τ, and η that have been identified in mammals. The initially described α and δ isoforms are confirmed to be phosphorylated forms of β and ζ, respectively (3). Through their amino-terminal α helical region, 14-3-3 proteins form homo- or heterodimers that interact with a wide variety of proteins: transcription factors, metabolic enzymes, cytoskeletal proteins, kinases, phosphatases, and other signaling molecules (3,4). The interaction of 14-3-3 proteins with their targets is primarily through a phospho-Ser/Thr motif. However, binding to divergent phospho-Ser/Thr motifs, as well as phosphorylation independent interactions has been observed (4). 14-3-3 binding masks specific sequences of the target protein, and therefore, modulates target protein localization, phosphorylation state, stability, and molecular interactions (1-4). 14-3-3 proteins may also induce target protein conformational changes that modify target protein function (4,5). Distinct temporal and spatial expression patterns of 14-3-3 isoforms have been observed in development and in acute response to extracellular signals and drugs, suggesting that 14-3-3 isoforms may perform different functions despite their sequence similarities (4). Several studies suggest that 14-3-3 isoforms are differentially regulated in cancer and neurological syndromes (2,3). Phosphorylation of 14-3-3ζ at Ser58 may regulate dimerization and affect its ability to interact with partner proteins, including p53 and ASK1 (6,7).

Background References

- Muslin, A.J. and Xing, H. (2000) *Cell Signal* 12, 703-9.
- Mackintosh, C. (2004) *Biochem J* 381, 329-42.
- Dougherty, M.K. and Morrison, D.K. (2004) *J Cell Sci* 117, 1875-84.
- Yaffe, M.B. (2002) *FEBS Lett* 513, 53-7.
- Bridges, D. and Moorhead, G.B. (2004) *Sci STKE* 2004, re10.
- Gu, Y.M. et al. (2006) *FEBS Lett* 580, 305-10.
- Zhou, J. et al. (2009) *Mol Cell Biol* 29, 4167-76.

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

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat

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