Revision 1

Store at -20C

#8312

14-3-3 (pan) Antibody

Cell Signaling TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB	H M R Mk B Pg	Endogenous	27-29	Rabbit	#P62258, #P61981, #P31946, #P27348, #Q04917, #P31947, #P63104	7531, 7532, 7529, 10971, 7533, 2810, 7534

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 and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

14-3-3 (pan) Antibody recognizes endogenous levels of total 14-3-3 protein. This antibody detects all known isoforms of mammalian 14-3-3 proteins (β/α, γ, ε, η, ζ/δ, θ/τ and σ).

Species predicted to react based on 100% sequence homology:

Chicken, D. melanogaster, Xenopus, Zebrafish, S. cerevisiae, C. elegans

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Met223 of human 14-3-3γ protein. Antibodies are purified by protein A and peptide affinity chromatography.

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).

Background References

1. Muslin, A.J. and Xing, H. (2000) *Cell Signal* 12, 703-9.
2. Mackintosh, C. (2004) *Biochem J* 381, 329-42.
3. Dougherty, M.K. and Morrison, D.K. (2004) *J Cell Sci* 117, 1875-84.
4. Yaffe, M.B. (2002) *FEBS Lett* 513, 53-7.
5. Bridges, D. and Moorhead, G.B. (2004) *Sci STKE* 2004, re10.

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

WB: Western Blotting

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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Limited Uses