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## 14-3-3 $\zeta/\delta$ (D7H5) Rabbit mAb

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

<b>Applications:</b> W	<b>Reactivity:</b> H M R Mk Pg	<b>Sensitivity:</b> Endogenous	<b>MW (kDa):</b> 28	<b>Source/Isotype:</b> Rabbit IgG	<b>UniProt ID:</b> #P63104	<b>Entrez-Gene Id:</b> 7534
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### Product Usage Information

#### Application

Western Blotting

#### Dilution

1:1000

### Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100  $\mu$ g/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at  $-20^{\circ}\text{C}$ . Do not aliquot the antibody.

### Specificity/Sensitivity

14-3-3  $\zeta/\delta$  (D7H5) Rabbit mAb recognizes endogenous levels of total 14-3-3  $\zeta/\delta$  protein. Although this antibody demonstrates a strong preference for 14-3-3  $\zeta/\delta$ , it will also detect purified, recombinant 14-3-3  $\alpha/\beta$ . It does not cross-react with any other known mammalian 14-3-3 isoforms.

### Species predicted to react based on 100% sequence homology

Chicken, Bovine

### Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Arg80 of human 14-3-3  $\zeta/\delta$  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,  $\beta$ ,  $\gamma$ ,  $\epsilon$ ,  $\sigma$ ,  $\zeta$ ,  $\tau$ , and  $\eta$  that have been identified in mammals. The initially described  $\alpha$  and  $\delta$  isoforms are confirmed to be phosphorylated forms of  $\beta$  and  $\zeta$ , respectively (3). Through their amino-terminal  $\alpha$  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

- 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.

### 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  $4^{\circ}\text{C}$  with gentle shaking, overnight.

### Applications Key

**W:** Western Blotting

### Cross-Reactivity Key

**H:** Human **M:** Mouse **R:** Rat **Mk:** Monkey **Pg:** Pig

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