PhosphoSolutions®
Antibodies that work™

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Anti-Phospho-Ser^{58} 14-3-3 Protein

Catalog Number: p1433-58 **Size:** 100 µl $310.00

Product Description: Affinity purified rabbit polyclonal antibody

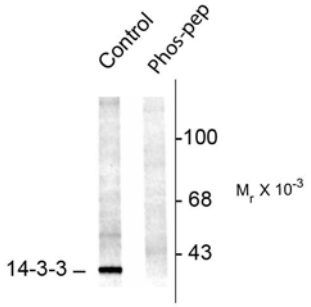
Applications: **WB**: 1:1000

Antigen: Phosphopeptide corresponding to amino acid residues surrounding the phospho-Ser^{58} of rat 14-3-3 protein.

Species reactivity: The antibody has been directly tested for reactivity in Western blots with human and rat tissue. It is anticipated that the antibody will react with bovine, canine, chicken, mouse, non-human primates, sheep, *Xenopus* and zebra fish based on the fact that these species have 100% homology with the amino acid sequence used as antigen for this antibody.

Biological Significance: 14-3-3 proteins are a family of highly conserved proteins that appear to have multiple roles in cell signaling (Bridges and Moorhead, 2005). The proteins are abundantly expressed in the brain and have been detected in the cerebrospinal fluid of patients with different neurological disorders (Berg et al., 2003). 14-3-3 proteins bind protein ligands that are typically phosphorylated on serine or threonine residues and regulate the functions of these binding partners by a number of different mechanisms (Silhan et al., 2004; Dougherty and Morrison, 2004). The14-3-3 proteins affect a diverse array of cellular processes including the cell cycle and transcription, signal transduction and intracellular trafficking. These functions of 14-3-3 proteins are facilitated by, if not dependent on, its dimeric structure. Recent work has demonstrated that the dimeric status of the 14-3-3 protein is regulated by site-specific serine phosphorylation (Woodcock et al., 2003).

Anti-Phospho-Ser^{58} 14-3-3 Protein



Western blot of rat brainstem lysate showing specific immuno-labeling of the ~29k 14-3-3 protein phosphorylated at Ser^{58} (Control). The immunolabeling is blocked by the phosphopeptide used as the antigen (Phos-pep) but not by the corresponding dephosphopeptide (not shown).

WB = Western Blot **IF** = Immunofluorescence **IHC** = Immunohistochemistry **IP** = Immunoprecipitation
Packaging: 100 µl in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg BSA per ml and 50% glycerol. Adequate amount of material to conduct 10-mini Western Blots.
Storage and Stability: Store at –20°C; stable for at least one year.
Shipment: Domestic - Blue Ice; International - Blue Ice or Dry Ice.

Purification Method: Prepared from rabbit serum by affinity purification via sequential chromatography on phospho- and dephosphopeptide affinity columns.

Antibody Specificity: Specific for the ~29k 14-3-3 protein phosphorylated at Ser^{58}. Immunolabeling is blocked by the phosphopeptide used as antigen but not by the corresponding dephosphopeptide.

Quality Control Tests: Western blots performed on each lot.

References:

Berg D, Holzmann C, Riess O (2003) 14-3-3 Proteins in the nervous system. Nat Rev Neurosci 4:752-762.

Bridges D, Moorhead GB (2005) 14-3-3 Proteins: a number of functions for a numbered protein. Sci STKE 2005:re10.

Dougherty MK, Morrison DK (2004) Unlocking the code of 14-3-3. J Cell Sci 117:1875-1884.

Silhan J, Obsilova V, Vecer J, Herman P, Sulc M, Teisinger J, Obsil T (2004) 14-3-3 Protein C-terminal stretch occupies ligand binding groove and is displaced by phosphopeptide binding. J Biol Chem 279:49113-49119.

Woodcock JM, Murphy J, Stomski FC, Berndt MC, Lopez AF (2003) The dimeric versus monomeric status of 14-3-3 *zeta* is controlled by phosphorylation of Ser^{58} at the dimer interface. J Biol Chem 278:36323-36327.

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