

Anti-Phospho-Ser⁵⁸ 14-3-3 Protein Antibody



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Catalog #: p1433-58

Size: 100 µl

Cite this Antibody: PhosphoSolutions Cat# p1433-58, RRID:AB_2492027

Host	Applications	Species Tested	Species Reactivity*	Molecular Weight
Rabbit	WB 1:1000 IHC 1:500	H, M, R Salamander	B, C, Ch, NHP, X, Z	~29 kDa

Product Description: Affinity purified rabbit polyclonal 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). The 14-3-3 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).

Antigen: Phosphopeptide corresponding to amino acid residues surrounding the phospho-Ser⁵⁸ of rat 14-3-3 protein.

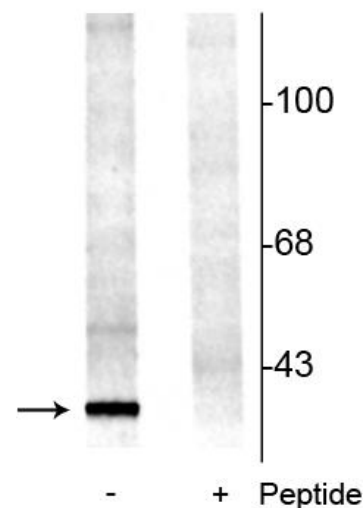
Antibody Specificity: Specific for endogenous levels of the ~29 kDa 14-3-3 protein phosphorylated at Ser⁵⁸. Immunolabeling is blocked by preadsorption with the phosphopeptide used as antigen, but not by the corresponding non-phosphopeptide.

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

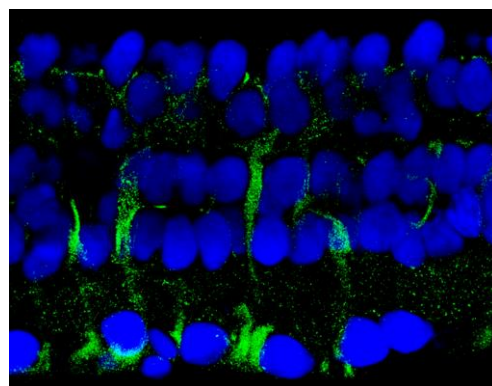
Quality Control Tests: Western blots performed on each lot.

Packaging: 100 µl in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg BSA per ml and 50% glycerol.

Storage and Stability: Shipped on blue ice. Storage at -20°C is recommended, as aliquots may be taken without freeze/thawing due to presence of 50% glycerol. Stable for at least 1 year at -20°C.



Western blot of rat brainstem lysate showing specific immunolabeling of the ~29 kDa 14-3-3 protein phosphorylated at Ser⁵⁸ (-). The immunolabeling is blocked by the phosphopeptide used as the antigen (+) but not by the corresponding non-phosphopeptide (not shown).



Immunostaining of salamander retina showing labeling of 14-3-3 protein when phosphorylated at Ser⁵⁸ in Müller glial cells in green and DNA in blue. Photo courtesy of Alex Vila, University of Texas at Houston.

Product Specific References:

Xiangjun Yang, Cheng Luo, Jian Cai, William M. Pierce, and Gülgün Tezel (2008) Phosphorylation-Dependent Interaction with 14-3-3 in the Regulation of Bad Trafficking in Retinal Ganglion Cells. *Invest. Ophthalmol. Vis. Sci.*, 49: 2483 - 2494.

General 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 Ser58 at the dimer interface. *J Biol Chem* 278:36323-36327.