

p-14-3-3 ζ (Ser 58): sc-101623

BACKGROUND

14-3-3 proteins regulate many cellular processes relevant to cancer biology, notably apoptosis, mitogenic signaling and cell-cycle checkpoints. Seven isoforms comprise this family of signaling intermediates, denoted 14-3-3 β, γ, ε, ζ, η, θ and σ. 14-3-3 proteins form dimers that present two binding sites for ligand proteins, thereby bringing together two proteins that may not otherwise associate. These ligands largely share a 14-3-3 consensus binding motif and exhibit serine/threonine phosphorylation. 14-3-3 proteins function in broad regulation of these ligand proteins, by cytoplasmic sequestration, occupation of interaction domains and import/export sequences, prevention of degradation, activation/repression of enzymatic activity and facilitation of protein modification, and thus loss of expression contributes to a vast array of pathogenic cellular activities.

REFERENCES

- Morrison, D. 1994. 14-3-3: modulators of signaling proteins? *Science* 266: 56-57.
- Muratake, T., et al. 1996. Structural organization and chromosomal assignment of the human 14-3-3 β chain gene (YWHAH). *Genomics* 36: 63-69.
- Yaffe, M.B., et al. 1997. The structural basis for 14-3-3 phosphopeptide binding specificity. *Cell* 91: 961-971.
- Megidish, T., et al. 1998. A novel sphingosine-dependent protein kinase (SDK1) specifically phosphorylates certain isoforms of 14-3-3 protein. *J. Biol. Chem.* 273: 21834-21845.
- Lim, R., et al. 2002. MADM, a novel adaptor protein that mediates phosphorylation of the 14-3-3 binding site of myeloid leukemia factor 1. *J. Biol. Chem.* 277: 40997-41008.
- Yu, T., et al. 2002. The 4.1/Ezrin/Radixin/Moesin domain of the DAL-1/Protein 4.1B tumour suppressor interacts with 14-3-3 proteins. *Biochem. J.* 365: 783-789.
- Hermeking H. 2003. The 14-3-3 cancer connection. *Nat. Rev. Cancer* 3: 931-943.

CHROMOSOMAL LOCATION

Genetic locus: YWHAZ (human) mapping to 8q23.1; Ywhaz (mouse) mapping to 15 B3.1.

SOURCE

p-14-3-3 ζ (Ser 58) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 58 of 14-3-3 ζ of human origin.

PRODUCT

Each vial contains 100 μg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

p-14-3-3 ζ (Ser 58) is recommended for detection of Ser 58 phosphorylated 14-3-3 ζ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2 μg per 100–500 μg of total protein (1 ml of cell lysate)], immunofluorescence and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for 14-3-3 ζ siRNA (h): sc-29583 and 14-3-3 ζ siRNA (m): sc-29585.

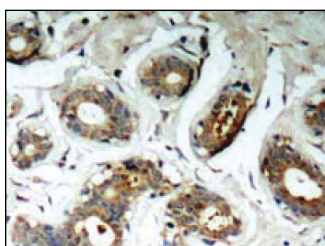
Molecular Weight of p-14-3-3 ζ: 30 kDa.

Positive Controls: NIH/3T3 + TNFα cell lysate: sc-24753 or human breast carcinoma tissue.

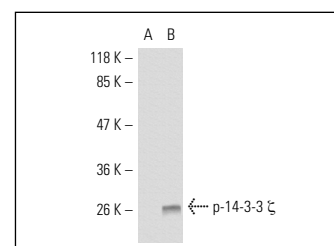
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent) and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



p-14-3-3 ζ (Ser 58): sc-101623. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing cytoplasmic staining.



p-14-3-3 ζ (Ser 58): sc-101623. Western blot analysis of phosphorylated 14-3-3 ζ expression in untreated (A) and TNFα-treated (B) NIH/3T3 whole cell lysates.

SELECT PRODUCT CITATIONS

- Kim, Y.S., et al. 2010. Protein kinase Cδ is associated with 14-3-3 phosphorylation in seizure-induced neuronal death. *Epilepsy Res.* 92: 30-40.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.