

14-3-3 (at-82): sc-33752

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 , ω , 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.
- 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.
- 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.

SOURCE

14-3-3 (at-82) is a rabbit polyclonal antibody raised against amino acids 21-75 mapping within an internal region of 14-3-3 of *Arabidopsis thaliana* origin.

PRODUCT

Each vial contains 200 μ g 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.

PROTOCOLS

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

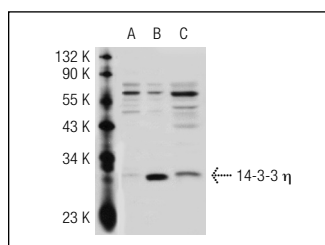
APPLICATIONS

14-3-3 (at-82) is recommended for detection of 14-3-3 and, to a lesser extent, 14-3-3-like proteins of *Arabidopsis thaliana* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

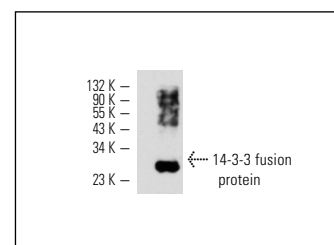
RECOMMENDED SECONDARY REAGENTS

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 A Blocking Reagent: sc-2333 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.

DATA



14-3-3 (at-82): sc-33752. Western blot analysis of 14-3-3 η expression in non-transfected 293T: sc-117752 (A), mouse 14-3-3 η transfected 293T: sc-117813 (B) and NIH/3T3 (C) whole cell lysates.



14-3-3 (at-82): sc-33752. Western blot analysis of *Arabidopsis* recombinant 14-3-3 fusion protein.

SELECT PRODUCT CITATIONS

- Pertl, H., et al. 2010. Osmoregulation in *Lilium* pollen grains occurs via modulation of the plasma membrane H⁺ ATPase activity by 14-3-3 proteins. *Plant Physiol.* 154: 1921-1928.
- Yu, X.Y., et al. 2012. Knockdown of Cdc25B in renal cell carcinoma is associated with decreased malignant features. *Asian Pac. J. Cancer Prev.* 13: 931-935.

RESEARCH USE

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