SANTA CRUZ BIOTECHNOLOGY, INC.

14-3-3 γ (A-12): sc-31958

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

1. Morrison, D. 1994. 14-3-3: modulators of signaling proteins? Science 266: 56-57.
2. Muratake, T., et al. 1996. Structural organization and chromosomal assignment of the human 14-3-3 β chain gene (YWHAH). Genomics 36: 63-69.
3. Yaffe, M.B., et al. 1997. The structural basis for 14-3-3 phosphopeptide binding specificity. Cell 91: 961-971.
4. 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.
5. 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.

CHROMOSOMAL LOCATION

Genetic locus: YWHAG (human) mapping to 7q11.23, YWHAZ (human) mapping to 8q22.3; Ywhag (mouse) mapping to 5 G2, Ywhaz (mouse) mapping to 15 B3.1.

SOURCE

14-3-3 γ (A-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of 14-3-3 γ of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-31958 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

RESEARCH USE

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

APPLICATIONS

14-3-3 γ (A-12) is recommended for detection of 14-3-3 γ and, to a lesser extent, 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 (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

14-3-3 γ (A-12) is also recommended for detection of 14-3-3 γ and, to a lesser extent, 14-3-3 ζ in additional species, including equine, canine, bovine, porcine and avian.

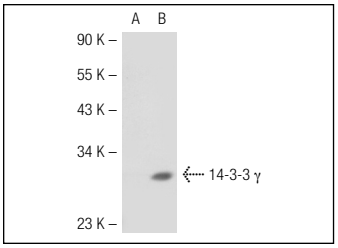
Molecular Weight of 14-3-3 γ: 33 kDa.

Positive Controls: 14-3-3 γ (h): 293T Lysate: sc-113231, K-562 whole cell lysate: sc-2203 or U-937 cell lysate: sc-2239.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



14-3-3 γ (A-12): sc-31958. Western blot analysis of 14-3-3 γ expression in non-transfected: sc-117752 (**A**) and human 14-3-3 γ transfected: sc-113231 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Nakamura, T., et al. 2010. The PX-RICS-14-3-3ζ/θ complex couples N-cadherin-β-catenin with dynein-dynactin to mediate its export from the endoplasmic reticulum. J. Biol. Chem. 285: 16145-16154.