SANTA CRUZ BIOTECHNOLOGY, INC.

14-3-3 γ (L-17): sc-31957

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. Horie, M., et al. 1999. Cloning, expression, and chromosomal mapping of the human 14-3-3 γ gene (YWHAG) to 7q11.23. Genomics 60: 241-243.
3. Autieri, M.V., et al. 1999. 14-3-3 γ interacts with and is phosphorylated by multiple protein kinase C isoforms in PDGF-stimulated human vascular smooth muscle cells. DNA Cell Biol. 18: 555-564.
4. Parvaresch, S., et al. 2002. 14-3-3 binding to the IGF-1 receptor is mediated by serine autophosphorylation. FEBS Lett. 532: 357-362.
5. Li, Y., et al. 2002. Regulation of TSC2 by 14-3-3 binding. J. Biol. Chem. 277: 44593-44596.
6. 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.

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 (L-17) 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-31957 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.

APPLICATIONS

14-3-3 γ (L-17) 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), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 (L-17) 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.

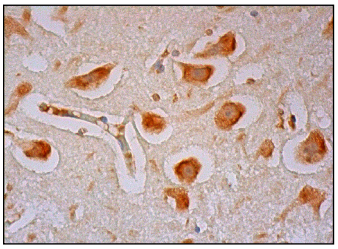
Molecular Weight of 14-3-3 γ: 33 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, NIH/3T3 whole cell lysate: sc-2210 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) 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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



14-3-3 γ (L-17): sc-31957. Immunoperoxidase staining of formalin fixed, paraffin-embedded human hippocampus tissue showing cytoplasmic and nuclear staining of neuronal cells and glial cells.

RESEARCH USE

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