SANTA CRUZ BIOTECHNOLOGY, INC.

14-3-3 γ (6A1): sc-69955

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., et al. 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 η 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.
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.
7. Hermeking, H. 2003. The 14-3-3 cancer connection. Nat. Rev. Cancer 3: 931-943.

CHROMOSOMAL LOCATION

Genetic locus: YWHAG (human) mapping to 7q11.23, Ywhag (mouse) mapping to 5 G2.

SOURCE

14-3-3 γ (6A1) is a mouse monoclonal antibody raised against the N-terminus of 14-3-3 γ of human origin.

PRODUCT

Each vial contains 50 µg IgG_{2a} in 0.5 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

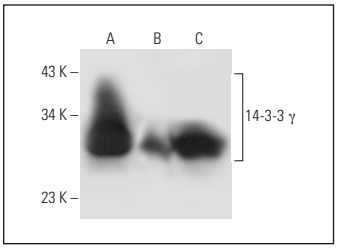
14-3-3 γ (6A1) is recommended for detection of 14-3-3 γ where the N-terminal Met is removed, resulting in an acetylated N-terminal Valine of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)]; not recommended for detection of unprocessed (non-modified) 14-3-3 γ.

Suitable for use as control antibody for 14-3-3 γ siRNA (h): sc-29582, 14-3-3 γ siRNA (m): sc-29584, 14-3-3 γ shRNA Plasmid (h): sc-29582-SH, 14-3-3 γ shRNA Plasmid (m): sc-29584-SH, 14-3-3 γ shRNA (h) Lentiviral Particles: sc-29582-V, 14-3-3 γ shRNA (m) Lentiviral Particles: sc-29584-V.

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.

DATA



14-3-3 γ (6A1): sc-69955. Western blot analysis of 14-3-3 γ expression in non-transfected 293T: sc-117752 (**A**), human 14-3-3 γ transfected 293T: sc-113231 (**B**) and K-562 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Song, Y., et al. 2012. Expression of 14-3-3 γ in patients with breast cancer: correlation with clinicopathological features and prognosis. Cancer Epidemiol. 36: 533-536.
2. Scheibner, K.A., et al. 2012. MiR-27a functions as a tumor suppressor in acute leukemia by regulating 14-3-3 θ. PLoS ONE 7: e50895.
3. Hiraoka, E., et al. 2019. Breast cancer cell motility is promoted by 14-3-3 γ. Breast Cancer 26: 581-593.
4. Yang, B., et al. 2019. Tetramethylpyrazine attenuates the endotheliotoxicity and the mitochondrial dysfunction by doxorubicin via 14-3-3γ/Bcl-2. Oxid. Med. Cell. Longev. 2019: 5820415.

RESEARCH USE

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

CONJUGATES

See **pan 14-3-3 (B-8): sc-133233** for pan 14-3-3 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.