SANTA CRUZ BIOTECHNOLOGY, INC.

14-3-3 ε (5A5): sc-130547

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 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.
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: YWHAE (human) mapping to 17p13.3; Ywhae (mouse) mapping to 11 B5.

SOURCE

14-3-3 ε (5A5) is a mouse monoclonal antibody raised against full-length recombinant 14-3-3 ε of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} in 1.0 ml 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

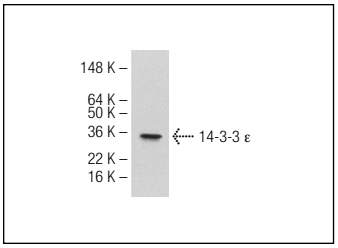
14-3-3 ε (5A5) 5A5) is recommended for detection of 14-3-3 ε of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for 14-3-3 ε siRNA (h): sc-29588, 14-3-3 ε siRNA (m): sc-29589, 14-3-3 ε shRNA Plasmid (h): sc-29588-SH, 14-3-3 ε shRNA Plasmid (m): sc-29589-SH, 14-3-3 ε shRNA (h) Lentiviral Particles: sc-29588-V and 14-3-3 ε shRNA (m) Lentiviral Particles: sc-29589-V.

Molecular Weight of 14-3-3 ε: 30 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, WEHI-231 whole cell lysate: sc-2213 or mouse brain extract: sc-2253.

DATA



14-3-3 ε (5A5): sc-130547. Western blot analysis of 14-3-3 ε expression in mouse brain tissue extract.

SELECT PRODUCT CITATIONS

1. Yu, D., et al. 2010. miR-451 protects against erythroid oxidant stress by repressing 14-3-3ζ. Genes Dev. 24: 1620-1633.

RESEARCH USE

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

PROTOCOLS

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

CONJUGATES

See **14-3-3 ε (8C3): sc-23957** for 14-3-3 ε antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.