SANTA CRUZ BIOTECHNOLOGY, INC.

14-3-3 ε (8C3): sc-23957

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.

CHROMOSOMAL LOCATION

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

SOURCE

14-3-3 ε (8C3) is a mouse monoclonal antibody raised against partially purified proteins from pineal gland of ovine origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

14-3-3 ε (8C3) is available conjugated to agarose (sc-23957 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-23957 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-23957 PE), fluorescein (sc-23957 FITC), Alexa Fluor® 488 (sc-23957 AF488), Alexa Fluor® 546 (sc-23957 AF546), Alexa Fluor® 594 (sc-23957 AF594) or Alexa Fluor® 647 (sc-23957 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-23957 AF680) or Alexa Fluor® 790 (sc-23957 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

14-3-3 ε (8C3) is recommended for detection of 14-3-3 ε of mouse, rat, human and ovine 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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 siRNA (r): sc-270535, 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 Plasmid (r): sc-270535-SH, 14-3-3 ε shRNA (h) Lentiviral Particles: sc-29588-V, 14-3-3 ε shRNA (m) Lentiviral Particles: sc-29589-V and 14-3-3 ε shRNA (r) Lentiviral Particles: sc-270535-V.

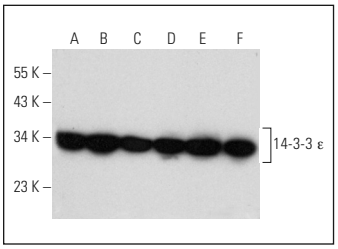
Molecular Weight of 14-3-3 ε: 30 kDa.

Positive Controls: Hela whole cell lysate: sc-2200, SK-N-SH cell lysate: sc-2410 or NIH/3T3 whole cell lysate: sc-2210.

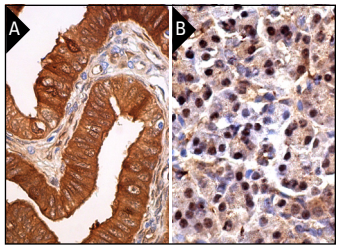
STORAGE

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

DATA



14-3-3 ε (8C3): sc-23957. Western blot analysis of 14-3-3 ε expression in HeLa (**A**), SK-N-SH (**B**), NIH/3T3 (**C**), c4 (**D**), C6 (**E**) and A-10 (**F**) whole cell lysates.



14-3-3 ε (8C3): sc-23957. Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing cytoplasmic and nuclear staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing nuclear and cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Jin, Y., et al. 2006. 14-3-3γ binds to MDMX that is phosphorylated by UV-activated Chk1, resulting in p53 activation. EMBO J. 25: 1207-1218.
2. Chan, Y.K. and Gack, M.U. 2016. A phosphomimetic-based mechanism of dengue virus to antagonize innate immunity. Nat. Immunol. 17: 523-530.
3. Xu, X., et al. 2017. A signature motif in LIM proteins mediates binding to checkpoint proteins and increases tumour radiosensitivity. Nat. Commun. 8: 14059.
4. Chen, J., et al. 2018. KLHL22 activates amino-acid-dependent mTORC1 signalling to promote tumorigenesis and ageing. Nature 557: 585-589.
5. He, Q.Q., et al. 2019. 14-3-3 ε plays an important role in testicular germ cell apoptosis: a functional proteomic study of experimental varicocele. Andrologia 51: e13275.
6. Li, H., et al. 2020. The glucocorticoid receptor-FKBP51 complex contributes to fear conditioning and posttraumatic stress disorder. J. Clin. Invest. 130: 877-889.
7. Wang, D., et al. 2021. Mitoferrin 2 deficiency prevents mitochondrial iron overload-induced endothelial injury and alleviates atherosclerosis. Exp. Cell Res. 402: 112552.
8. Zheng, Z., et al. 2022. Lysine crotonylation regulates leucine-deprivation-induced autophagy by a 14-3-3ε-PPM1B axis. Cell Rep. 41: 111850.
9. Müller Bark, J., et al. 2023. Proteome profiling of salivary small extracellular vesicles in glioblastoma patients. Cancer 129: 2836-2847.

RESEARCH USE

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

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