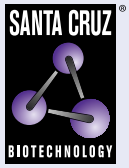
SANTA CRUZ BIOTECHNOLOGY, INC.

14-3-3 ε (F-3): sc-393177



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 η chain gene (YWHAH). Genomics 36: 63-69.

CHROMOSOMAL LOCATION

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

SOURCE

14-3-3 ε (F-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 136-175 within an internal region of 14-3-3 ε of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

14-3-3 ε (F-3) is available conjugated to agarose (sc-393177 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393177 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393177 PE), fluorescein (sc-393177 FITC), Alexa Fluor® 488 (sc-393177 AF488), Alexa Fluor® 546 (sc-393177 AF546), Alexa Fluor® 594 (sc-393177 AF594) or Alexa Fluor® 647 (sc-393177 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393177 AF680) or Alexa Fluor® 790 (sc-393177 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393177 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

APPLICATIONS

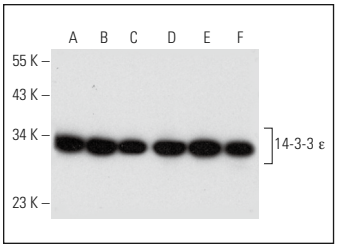
14-3-3 ε (F-3) is recommended for detection of 14-3-3 ε of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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 ε (F-3) is also recommended for detection of 14-3-3 ε in additional species, including equine, canine, bovine, porcine and avian.

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.

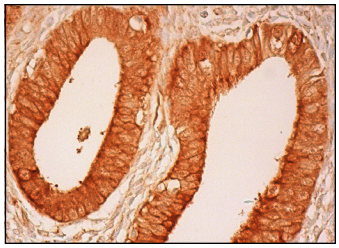
Molecular Weight of 14-3-3 ε: 30 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, NIH/3T3 whole cell lysate: sc-2210 or c4 whole cell lysate: sc-364186.

DATA



14-3-3 ε (F-3): sc-393177. 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 (F-3): sc-393177. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pre-menopausal utuerus tissue showing cytoplasmic and nuclear staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Vahid, S., et al. 2016. Molecular chaperone Hsp27 regulates the Hippo tumor suppressor pathway in cancer. Sci. Rep. 6: 31842.
2. Abdrabou, A., et al. 2020. Differential subcellular distribution and translocation of seven 14-3-3 isoforms in response to EGF and during the cell cycle. Int. J. Mol. Sci. 21: 318.
3. Steinle, H., et al. 2021. 14-3-3 and erlin proteins differentially interact with RIPK2 complexes. J. Cell Sci. 134: jcs258137.
4. Spencer, A., et al. 2021. Biomechanical regulation of breast cancer metastasis and progression. Sci. Rep. 11: 9838.
5. García-Alonso, S., et al. 2022. Structure of the RAF1-HSP90-CDC37 complex reveals the basis of RAF1 regulation. Mol. Cell 82: 3438-3452.e8.

RESEARCH USE

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