

14-3-3 ϵ (F-3): sc-393177

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

- Morrison, D. 1994. 14-3-3: modulators of signaling proteins? *Science* 266: 56-57.
- 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: YWHAH (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 μ g IgG₁ 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 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393177 HRP), 200 μ g/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 μ g/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 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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

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STORAGE

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

APPLICATIONS

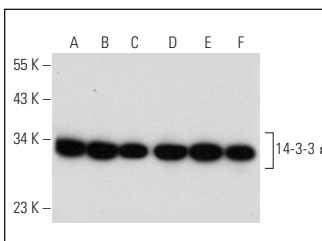
14-3-3 ϵ (F-3) is recommended for detection of 14-3-3 ϵ of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution 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.

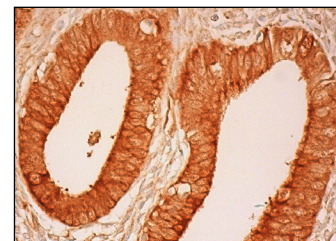
Molecular Weight of 14-3-3 ϵ : 30 kDa.

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 premenopausal uterus tissue showing cytoplasmic and nuclear staining of glandular cells.

SELECT PRODUCT CITATIONS

- Vahid, S., et al. 2016. Molecular chaperone Hsp27 regulates the Hippo tumor suppressor pathway in cancer. *Sci. Rep.* 6: 31842.
- Lu, K., et al. 2018. 14-3-3 ϵ is a nuclear matrix protein, and its altered expression and localization are associated with curcumin-induced apoptosis of MG-63 cells. *Oncol. Lett.* 15: 338-346.
- 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.
- Spencer, A., et al. 2021. Biomechanical regulation of breast cancer metastasis and progression. *Sci. Rep.* 11: 9838.
- 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.