SANTA CRUZ BIOTECHNOLOGY, INC.

14-3-3 γ (D-6): sc-398423

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

SOURCE

14-3-3 γ (D-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 128-149 within an internal region of 14-3-3 γ 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 γ (D-6) is available conjugated to agarose (sc-398423 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398423 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398423 PE), fluorescein (sc-398423 FITC), Alexa Fluor® 488 (sc-398423 AF488), Alexa Fluor® 546 (sc-398423 AF546), Alexa Fluor® 594 (sc-398423 AF594) or Alexa Fluor® 647 (sc-398423 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398423 AF680) or Alexa Fluor® 790 (sc-398423 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398423 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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 (D-6) is recommended for detection of 14-3-3 γ 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

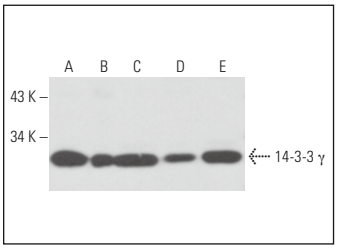
14-3-3 γ (D-6) is also recommended for detection of 14-3-3 γ in additional species, including equine, canine, bovine, porcine and avian.

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 siRNA (r): sc-156018, 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 Plasmid (r): sc-156018-SH, 14-3-3 γ shRNA (h) Lentiviral Particles: sc-29582-V, 14-3-3 γ shRNA (m) Lentiviral Particles: sc-29584-V and 14-3-3 γ shRNA (r) Lentiviral Particles: sc-156018-V.

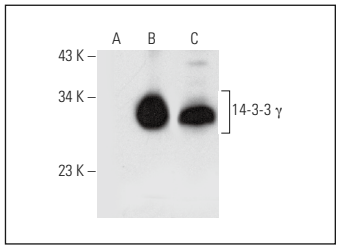
Molecular Weight of 14-3-3 γ: 33 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, A-10 cell lysate: sc-3806 or 14-3-3 γ (h): 293T Lysate: sc-113231.

DATA



14-3-3 γ (D-6): sc-398423. Western blot analysis of 14-3-3 γ expression in A-10 (**A**), L6 (**B**), C2C12 (**C**), MOLT-4 (**D**) and SUP-T1 (**E**) whole cell lysates.



14-3-3 γ (D-6): sc-398423. 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 Jurkat (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Esteve, P.O., et al. 2016. Binding of 14-3-3 reader proteins to phosphorylated DNMT1 facilitates aberrant DNA methylation and gene expression. Nucleic Acids Res. 44: 1642-1656.
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. Kim, H., et al. 2021. Selenoprotein W ensures physiological bone remodeling by preventing hyperactivity of osteoclasts. Nat. Commun. 12: 2258.
4. Cho, E., et al. 2023. 14-3-3 γ haploinsufficiency leads to altered dopamine pathway and Parkinson's disease-like motor incoordination in mice. Mol. Brain 16: 2.

RESEARCH USE

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