SANTA CRUZ BIOTECHNOLOGY, INC.

14-3-3 β (A-6): sc-25276

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. 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.
3. Yaffe, M.B., et al. 1997. The structural basis for 14-3-3 phosphopeptide binding specificity. Cell 91: 961-971.

CHROMOSOMAL LOCATION

Genetic locus: YWHAB (human) mapping to 20q13.12; Ywhab (mouse) mapping to 2 H3.

SOURCE

14-3-3 β (A-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 220-244 at the C-terminus of 14-3-3 β of human origin.

PRODUCT

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

14-3-3 β (A-6) is available conjugated to agarose (sc-25276 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-25276 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-25276 PE), fluorescein (sc-25276 FITC), Alexa Fluor® 488 (sc-25276 AF488), Alexa Fluor® 546 (sc-25276 AF546), Alexa Fluor® 594 (sc-25276 AF594) or Alexa Fluor® 647 (sc-25276 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-25276 AF680) or Alexa Fluor® 790 (sc-25276 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-25276 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 β (A-6) is recommended for detection of 14-3-3 β of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500), 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).

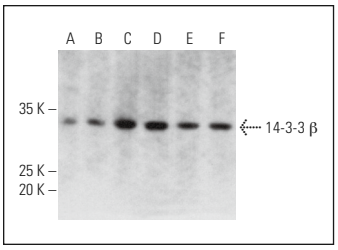
14-3-3 β (A-6) is also recommended for detection of 14-3-3 β in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for 14-3-3 β siRNA (h): sc-29186, 14-3-3 β siRNA (m): sc-29187, 14-3-3 β siRNA (r): sc-270534, 14-3-3 β shRNA Plasmid (h): sc-29186-SH, 14-3-3 β shRNA Plasmid (m): sc-29187-SH, 14-3-3 β shRNA Plasmid (r): sc-270534-SH, 14-3-3 β shRNA (h) Lentiviral Particles: sc-29186-V, 14-3-3 β shRNA (m) Lentiviral Particles: sc-29187-V and 14-3-3 β shRNA (r) Lentiviral Particles: sc-270534-V.

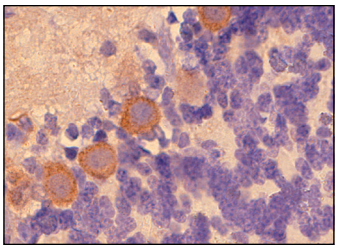
Molecular Weight of 14-3-3 β: 30 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Neuro-2A whole cell lysate: sc-364185 or 3T3-L1 cell lysate: sc-2243.

DATA



14-3-3 β (A-6): sc-25276. Western blot analysis of 14-3-3 β expression in HeLa (**A**), Hep G2 (**B**), Neuro-2A (**C**), 3T3-L1 (**D**), C6 (**E**) and H19-7/IGF-IR (**F**) whole cell lysates.



14-3-3 β (A-6): sc-25276. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse brain tissue showing cytoplasmic localization in selected cells.

SELECT PRODUCT CITATIONS

1. Katayama, K., et al. 2005. Akt/protein kinase B-dependent phosphorylation and inactivation of WEE1Hu promote cell cycle progression at G_2/M transition. Mol. Cell. Biol. 25: 5725-5737.
2. Graf, M., et al. 2011. 14-3-3 β in the healthy and diseased male reproductive system. Hum. Reprod. 26: 59-66.
3. Scheibner, K.A., et al. 2012. MiR-27a functions as a tumor suppressor in acute leukemia by regulating 14-3-3 θ. PLoS ONE 7: e50895.
4. Li, S., et al. 2014. 14-3-3 binding to cyclin Y contributes to cyclin Y/CDK14 association. Acta Biochim. Biophys. Sin. 46: 299-304.
5. Petri, M.K., et al. 2015. PTPIP51 levels in glioblastoma cells depend on inhibition of the EGF-receptor. J. Neurooncol. 123: 15-25.

RESEARCH USE

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