

pan 14-3-3 (B-11): sc-133232

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

SOURCE

pan 14-3-3 (B-11) is a mouse monoclonal antibody raised against amino acids 1-246 representing full length 14-3-3 β 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.

pan 14-3-3 (B-11) is available conjugated to agarose (sc-133232 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-133232 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133232 PE), fluorescein (sc-133232 FITC), Alexa Fluor[®] 488 (sc-133232 AF488), Alexa Fluor[®] 546 (sc-133232 AF546), Alexa Fluor[®] 594 (sc-133232 AF594) or Alexa Fluor[®] 647 (sc-133232 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-133232 AF680) or Alexa Fluor[®] 790 (sc-133232 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

pan 14-3-3 (B-11) is recommended for detection of pan 14-3-3 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).

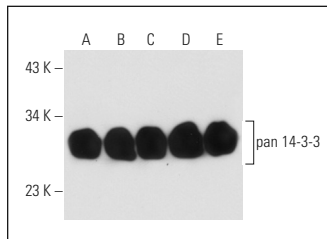
Molecular Weight of pan 14-3-3: 30 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

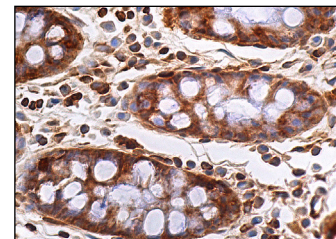
STORAGE

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

DATA



pan 14-3-3 (B-11): sc-133232. Western blot analysis of pan 14-3-3 expression in K-562 (A), HeLa (B), Jurkat (C), NIH/3T3 (D) and KNRK (E) whole cell lysates.



pan 14-3-3 (B-11): sc-133232. Immunoperoxidase staining of formalin fixed, paraffin-embedded human rectum tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

- Jayaraman, T., et al. 2011. 14-3-3 binding and phosphorylation of neuroglobin during hypoxia modulate six-to-five heme pocket coordination and rate of nitrite reduction to nitric oxide. *J. Biol. Chem.* 286: 42679-42689.
- Medina, D.L., et al. 2015. Lysosomal calcium signalling regulates autophagy through calcineurin and TFEB. *Nat. Cell Biol.* 17: 288-299.
- Matsumoto, Y., et al. 2016. Reciprocal stabilization of ABL and TAZ regulates osteoblastogenesis through transcription factor RUNX2. *J. Clin. Invest.* 126: 4482-4496.
- Yosefzon, Y., et al. 2018. Caspase-3 regulates YAP-dependent cell proliferation and organ size. *Mol. Cell* 70: 573-587.e4.
- Kumar, S., et al. 2020. Mammalian Atg8 proteins and the autophagy factor IRGM control mTOR and TFEB at a regulatory node critical for responses to pathogens. *Nat. Cell Biol.* 22: 973-985.
- Dang, T.T. and Back, S.H. 2021. Translation inhibitors activate autophagy master regulators TFEB and TFE3. *Int. J. Mol. Sci.* 22: 12083.
- Du, X., et al. 2022. Nuciferine protects against high-fat diet-induced hepatic steatosis and Insulin resistance via activating TFEB-mediated autophagy-lysosomal pathway. *Acta Pharm. Sin. B* 12: 2869-2886.
- Sedov, E., et al. 2022. THY1-mediated mechanisms converge to drive YAP activation in skin homeostasis and repair. *Nat. Cell Biol.* 24: 1049-1063.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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