

pan 14-3-3 (H-8): sc-1657

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 β 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 (H-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1-30 at the N-terminus of pan 14-3-3 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-1657 X, 200 μ g/0.1 ml.

pan 14-3-3 (H-8) is available conjugated to HRP (sc-1657 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-1657 PE), fluorescein (sc-1657 FITC), Alexa Fluor[®] 488 (sc-1657 AF488), Alexa Fluor[®] 546 (sc-1657 AF546), Alexa Fluor[®] 594 (sc-1657 AF594) or Alexa Fluor[®] 647 (sc-1657 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-1657 AF680) or Alexa Fluor[®] 790 (sc-1657 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, pan 14-3-3 (H-8) is available conjugated to TRITC (sc-1657 TRITC, 200 μ g/ml), for IF, IHC(P) and FCM.

Blocking peptide available for competition studies, sc-1657 P, (100 μ g 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

pan 14-3-3 (H-8) is recommended for detection of pan 14-3-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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), flow cytometry (1 μ g per 1 x 10⁶ cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

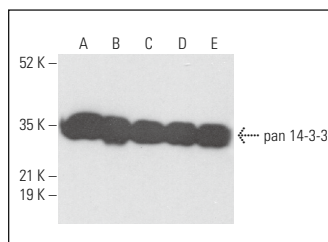
pan 14-3-3 (H-8) is also recommended for detection of pan 14-3-3 in additional species, including equine, canine, bovine, porcine and avian.

pan 14-3-3 (H-8) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

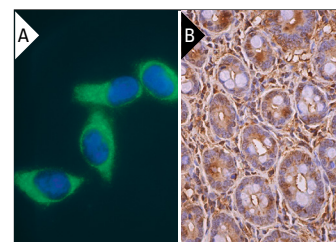
Molecular Weight of pan 14-3-3: 30 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-431 whole cell lysate: sc-2201 or MOLT-4 cell lysate: sc-2233.

DATA



pan 14-3-3 (H-8): sc-1657. Western blot analysis of pan 14-3-3 expression in HeLa (A), MOLT-4 (B), NCI-H1299 (C), A-431 (D) and 3T3-L1 (E) whole cell lysates.



pan 14-3-3 (H-8): sc-1657. Immunofluorescence staining of methanol-fixed HeLa cells. Note cytoplasmic fluorescein immunostaining and nuclear DAPI counterstain (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing cytoplasmic and nuclear staining of glandular cells and endothelial cells (B).

SELECT PRODUCT CITATIONS

- Uchida, T., et al. 2000. IRS-4 mediates protein kinase B signaling during insulin stimulation without promoting antiapoptosis. *Mol. Cell. Biol.* 20: 126-138.
- Zhang, X., et al. 2022. Targeting lysine-specific demethylase 1A inhibits renal epithelial-mesenchymal transition and attenuates renal fibrosis. *FASEB J.* 36: e22122.
- Yang, X., et al. 2023. The pseudokinase NRBP1 activates Rac1/Cdc42 via P-Rex1 to drive oncogenic signalling in triple-negative breast cancer. *Oncogene* 42: 833-847.
- Hu, C., et al. 2024. Proteome-based molecular subtyping and therapeutic target prediction in gastric cancer. *Mol. Oncol.* 18: 1437-1459.

RESEARCH USE

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