SANTA CRUZ BIOTECHNOLOGY, INC.

14-3-3 η (6A12): sc-293464

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.
4. Megidish, T., et al. 1998. A novel sphingosine-dependent protein kinase (SDK1) specifically phosphorylates certain isoforms of 14-3-3 protein. J. Biol. Chem. 273: 21834-21845.
5. Lim, R., et al. 2002. MADM, a novel adaptor protein that mediates phosphorylation of the 14-3-3 binding site of myeloid leukemia factor 1. J. Biol. Chem. 277: 40997-41008.
6. Yu, T., et al. 2002. The 4.1/Ezrin/Radixin/Moesin domain of the DAL-1/protein 4.1B tumour suppressor interacts with 14-3-3 proteins. Biochem. J. 365: 783-789.

CHROMOSOMAL LOCATION

Genetic locus: YWHAH (human) mapping to 22q12.3; Ywhah (mouse) mapping to 5 B1.

SOURCE

14-3-3 η (6A12) is a mouse monoclonal antibody raised against amino acids 71-170 representing partial length 14-3-3 η of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

RESEARCH USE

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

APPLICATIONS

14-3-3 η (6A12) is recommended for detection of 14-3-3 η of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for 14-3-3 η siRNA (h): sc-43581, 14-3-3 η siRNA (m): sc-43582, 14-3-3 η siRNA (r): sc-270541, 14-3-3 η shRNA Plasmid (h): sc-43581-SH, 14-3-3 η shRNA Plasmid (m): sc-43582-SH, 14-3-3 η shRNA Plasmid (r): sc-270541-SH, 14-3-3 η shRNA (h) Lentiviral Particles: sc-43581-V, 14-3-3 η shRNA (m) Lentiviral Particles: sc-43582-V and 14-3-3 η shRNA (r) Lentiviral Particles: sc-270541-V.

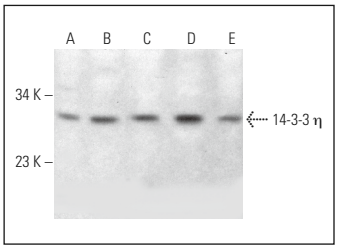
Molecular Weight of 14-3-3 η: 28 kDa.

Positive Controls: WEHI-231 whole cell lysate: sc-2213, EOC 20 whole cell lysate: sc-364187 or T98G cell lysate: sc-2294.

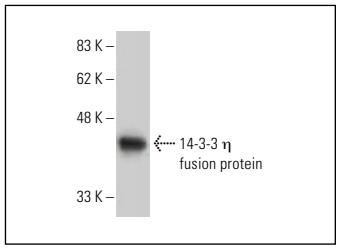
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



14-3-3 η (6A12): sc-293464. Western blot analysis of 14-3-3 η expression in SW480 (**A**), T98G (**B**), EOC 20 (**C**), WEHI-231 (**D**) and KNRK (**E**) whole cell lysates.



14-3-3 η (6A12): sc-293464. Western blot analysis of human recombinant 14-3-3 η fusion protein.

SELECT PRODUCT CITATIONS

1. Riedl, W., et al. 2019. Zika virus NS3 mimics a cellular 14-3-3-binding motif to antagonize RIG-I- and MDA5-mediated innate immunity. Cell Host Microbe 26: 493-503.e6.
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.

CONJUGATES

See **pan 14-3-3 (B-8): sc-133233** for pan 14-3-3 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.