

14-3-3 σ (5D7): sc-100638

BACKGROUND

14-3-3 proteins regulate many cellular processes relevant to cancer biology, notably apoptosis, mitogenic signaling and cell cycle checkpoints. Seven isoforms, denoted 14-3-3 β , γ , ϵ , ζ , η , θ and σ , comprise this family of signaling intermediates. 14-3-3 σ , also known as SFN, stratifin, HME1 or YWHAS, is a secreted adaptor protein that is involved in regulating both general and specific signaling pathways. Expressed predominately in stratified squamous keratinizing epithelium, 14-3-3 σ is able to bind and modify the activity of a large number of proteins, such as KRT17 (Keratin 17), through recognition of a phosphothreonine or phosphoserine motif. When bound to KRT17, for example, 14-3-3 σ acts to stimulate the Akt/mTOR signaling pathway by upregulating protein synthesis and cell growth. 14-3-3 σ also functions to positively mediate IGF-I-induced cell cycle progression and can bind to a variety of translation initiation factors, thus controlling mitotic translation. In response to tumor growth, 14-3-3 σ positively regulates the tumor suppressor p53 and increases the rate of p53-regulated inhibition of G₂/M cell cycle progression. Multiple isoforms of 14-3-3 σ exist due to alternative splicing events.

CHROMOSOMAL LOCATION

Genetic locus: SFN (human) mapping to 1p36.11.

SOURCE

14-3-3 σ (5D7) is a mouse monoclonal antibody raised against recombinant 14-3-3 σ of human origin.

PRODUCT

Each vial contains 100 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

14-3-3 σ (5D7) is recommended for detection of 14-3-3 σ of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for 14-3-3 σ siRNA (h): sc-29590, 14-3-3 σ shRNA Plasmid (h): sc-29590-SH and 14-3-3 σ shRNA (h) Lentiviral Particles: sc-29590-V.

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

Positive Controls: HeLa nuclear extract: sc-2120, HeLa whole cell lysate: sc-2200 or A-431 whole cell lysate: sc-2201.

RESEARCH USE

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

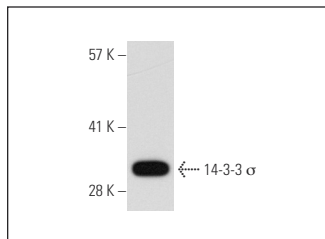
PROTOCOLS

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

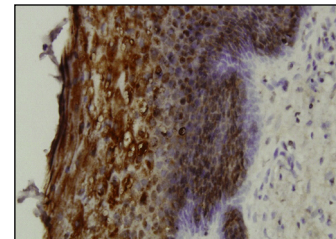
STORAGE

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

DATA



14-3-3 σ (5D7): sc-100638. Western blot analysis of 14-3-3 σ expression in HeLa nuclear extract.



14-3-3 σ (5D7): sc-100638. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human uterine cervix tissue showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Larriba, M.J., et al. 2010. Novel snail1 target proteins in human colon cancer identified by proteomic analysis. *PLoS ONE* 5: e10221.
- Raaby, L., et al. 2010. A characterization of the expression of 14-3-3 isoforms in psoriasis, basal cell carcinoma, atopic dermatitis and contact dermatitis. *Dermatol. Reports* 2: E14.
- Wan, X.B., et al. 2012. Molecular prognostic prediction for locally advanced nasopharyngeal carcinoma by support vector machine integrated approach. *PLoS ONE* 7: e31989.
- Chen, D., et al. 2014. TAp73 promotes cell survival upon genotoxic stress by inhibiting p53 activity. *Oncotarget* 5: 8107-8122.
- Qi, Y.J., et al. 2014. Downregulation of 14-3-3 σ correlates with multistage carcinogenesis and poor prognosis of esophageal squamous cell carcinoma. *PLoS ONE* 9: e95386.
- Baron, B., et al. 2015. Isolation of a growth factor stress-induced pancreatic cancer sub-population: insight into changes due to micro-environment. *Cancer Genomics Proteomics* 12: 49-55.
- Zheng, G., et al. 2016. MYCN-mediated miR-21 overexpression enhances chemo-resistance via targeting CADM1 in tongue cancer. *J. Mol. Med.* 94: 1129-1141.
- Lee, T.G., et al. 2017. Fhit, a tumor suppressor protein, induces autophagy via 14-3-3 τ in non-small cell lung cancer cells. *Oncotarget* 8: 31923-31937.
- Xie, J.J., et al. 2018. Super-enhancer-driven long non-coding RNA LINC01503, regulated by TP63, is over-expressed and oncogenic in squamous cell carcinoma. *Gastroenterology* 154: 2137-2151.

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.