

14-3-3 σ (N-14): sc-7681

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 β 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 translocation 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; Sfn (mouse) mapping to 4 D2.3.

SOURCE

14-3-3 σ (N-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of 14-3-3 σ of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7681 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

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

14-3-3 σ (N-14) is also recommended for detection of 14-3-3 σ in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for 14-3-3 σ siRNA (h): sc-29590, 14-3-3 σ siRNA (m): sc-29591, 14-3-3 σ shRNA Plasmid (h): sc-29590-SH, 14-3-3 σ shRNA Plasmid (m): sc-29591-SH, 14-3-3 σ shRNA (h) Lentiviral Particles: sc-29590-V and 14-3-3 σ shRNA (m) Lentiviral Particles: sc-29591-V.

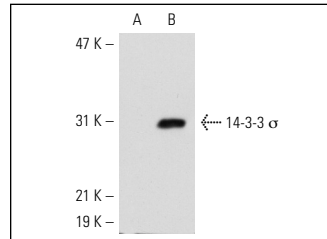
Molecular Weight of 14-3-3 σ : 30 kDa.

Positive Controls: 14-3-3 σ (h3): 293T Lysate: sc-110782, A-431 whole cell lysate: sc-2201 or HeLa whole cell lysate: sc-2200.

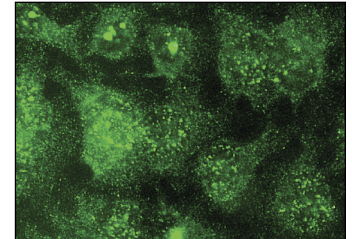
STORAGE

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 (N-14): sc-7681. Western blot analysis of 14-3-3 σ expression in non-transfected: sc-117752 (A) and human 14-3-3 σ transfected: sc-110782 (B) 293T whole cell lysates.



14-3-3 σ (N-14): sc-7681. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization.

SELECT PRODUCT CITATIONS

- Iwata, N., et al. 2000. Frequent hypermethylation of CpG islands and loss of expression of the 14-3-3 gene in human hepatocellular carcinoma. *Oncogene* 19: 5298-5302.
- Suárez-Bonnet, A., et al. 2010. Immunohistochemical localisation of 14-3-3 σ protein in normal canine tissues. *Vet. J.* 185: 218-221.
- Jeong, J.H., et al. 2010. p53-independent induction of G₁ arrest and p21^{WAF1/CIP1} expression by ascofuranone, an isoprenoid antibiotic, through downregulation of c-Myc. *Mol. Cancer Ther.* 9: 2102-2113.
- Rohaly, G., et al. 2010. Simian virus 40 activates ATR- Δ p53 signaling to override cell cycle and DNA replication control. *J. Virol.* 84: 10727-10747.
- Xin, Y., et al. 2011. IKK1 control of epidermal differentiation is modulated by notch signaling. *Am. J. Pathol.* 178: 1568-1577.
- Xu, Y., et al. 2011. Multiple pathways were involved in tubeimoside-1-induced cytotoxicity of HeLa cells. *J. Proteomics* 75: 491-501.
- Di Costanzo, A., et al. 2011. A dominant mutation etiologic for human tricho-dento-osseous syndrome impairs the ability of DLX3 to downregulate Δ Np63 α . *J. Cell. Physiol.* 226: 2189-2197.
- Inglés-Esteve, J., et al. 2012. Inhibition of specific NF κ B activity contributes to the tumor suppressor function of 14-3-3 σ in breast cancer. *PLoS ONE* 7: e38347.

RESEARCH USE

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


 MONOS
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Try **14-3-3 σ (E-11): sc-166473** or **14-3-3 σ (5D7): sc-100638**, our highly recommended monoclonal alternatives to 14-3-3 σ (N-14).