

# 14-3-3 $\sigma$ (h3): 293T Lysate: sc-110782

## 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  $\beta$ ,  $\gamma$ ,  $\epsilon$ ,  $\zeta$ ,  $\eta$ ,  $\theta$  and  $\sigma$ , comprise this family of signaling intermediates. 14-3-3  $\sigma$ , 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 keratinising epithelium, 14-3-3  $\sigma$  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  $\sigma$  acts to stimulate the Akt/mTOR signaling pathway by upregulating protein synthesis and cell growth. 14-3-3  $\sigma$  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  $\sigma$  positively regulates the tumor suppressor p53 and increases the rate of p53-regulated inhibition of G<sub>2</sub>/M cell cycle progression. Multiple isoforms of 14-3-3  $\sigma$  exist due to alternative splicing events.

## REFERENCES

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## CHROMOSOMAL LOCATION

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

## PRODUCT

14-3-3  $\sigma$  (h3): 293T Lysate represents a lysate of human 14-3-3  $\sigma$  transfected 293T cells and is provided as 100  $\mu$ g protein in 200  $\mu$ l SDS-PAGE buffer.

## APPLICATIONS

14-3-3  $\sigma$  (h3): 293T Lysate is suitable as a Western Blotting positive control for human reactive 14-3-3  $\sigma$  antibodies. Recommended use: 10-20  $\mu$ l per lane.

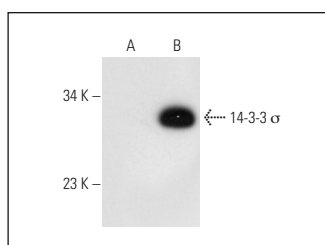
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

14-3-3  $\sigma$  (E-11): sc-166473 is recommended as a positive control antibody for Western Blot analysis of enhanced human 14-3-3  $\sigma$  expression in 14-3-3  $\sigma$  transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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.

## DATA



14-3-3  $\sigma$  (E-11): sc-166473. Western blot analysis of 14-3-3  $\sigma$  expression in non-transfected: sc-117752 (A) and human 14-3-3  $\sigma$  transfected: sc-110782 (B) 293T whole cell lysates.

## STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.