

## STC1 (1A3): sc-293435



The Power to Question

## BACKGROUND

Stanniocalcin 1 (STC1) and stanniocalcin 2 (STC2) are mammalian peptide hormones that were previously considered to be present only in bony fish, where they are involved in calcium homeostasis. STC1 plays a role in calcium and phosphate homeostasis and is phosphorylated *in vitro* by protein kinase C, and STC2 is phosphorylated *in vitro* by casein kinase II (CK2). A human fibrosarcoma cell line, HT1080, expresses both STC1 and STC2 as secreted phosphoproteins *in vivo*, with STC2 being phosphorylated by an ecto-CK2-like enzyme. STC1 and STC2 have opposite effects on calcium and phosphate homeostasis, namely anti-hypercalcemic and anti-hypocalcemic actions, respectively. STC1 and STC2 are detected in human adrenal tumors, such as pheochromocytoma, differentiated neuroblastoma aldosterone-producing adenoma, and in cultured adrenal tumor cells (rat pheochromocytoma PC-12 cells and human neuroblastoma NB-1 cells).

## REFERENCES

- Chang, A.C., et al. 1998. Identification of a second stanniocalcin cDNA in mouse and human: stanniocalcin 2. *Mol. Cell. Endocrinol.* 141: 95-99.
- Honda, S., et al. 1999. Regulation by  $1\alpha,25$ -dihydroxyvitamin  $D_3$  of expression of stanniocalcin messages in the rat kidney and ovary. *FEBS Lett.* 459: 119-122.
- Jellinek, D.A., et al. 2000. Stanniocalcin 1 and 2 are secreted as phosphoproteins from human fibrosarcoma cells. *Biochem. J.* 350: 453-461.
- Miura, W., et al. 2000. Expression of stanniocalcin in zona glomerulosa and medulla of normal human adrenal glands, and some adrenal tumors and cell lines. *APMIS* 108: 367-372.
- Stasko, S.E., et al. 2001. Stanniocalcin gene expression during mouse urogenital development: a possible role in mesenchymal-epithelial signalling. *Dev. Dyn.* 220: 49-59.

## CHROMOSOMAL LOCATION

Genetic locus: STC1 (human) mapping to 8p21.2; Stc1 (mouse) mapping to 14 D2.

## SOURCE

STC1 (1A3) is a mouse monoclonal antibody raised against amino acids 141-247 representing partial length STC1 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g 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.

## PROTOCOLS

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

## APPLICATIONS

STC1 (1A3) is recommended for detection of STC1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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).

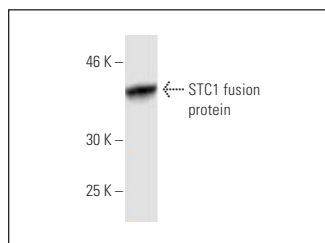
Suitable for use as control antibody for STC1 siRNA (h): sc-44126, STC1 siRNA (m): sc-44871, STC1 shRNA Plasmid (h): sc-44126-SH, STC1 shRNA Plasmid (m): sc-44871-SH, STC1 shRNA (h) Lentiviral Particles: sc-44126-V and STC1 shRNA (m) Lentiviral Particles: sc-44871-V.

Molecular Weight of STC1: 31 kDa.

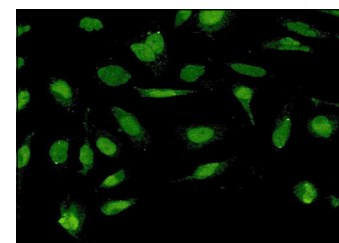
## RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



STC1 (1A3): sc-293435. Western blot analysis of human recombinant STC1 fusion protein.



STC1 (1A3): sc-293435. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

## SELECT PRODUCT CITATIONS

- Long, X., et al. 2022. Obesity modulates cell-cell interactions during ovarian folliculogenesis. *iScience* 25: 103627.
- Lin, F., et al. 2022. Stanniocalcin 1 promotes metastasis, lipid metabolism and cisplatin chemoresistance via the FOXC2/ITGB6 signaling axis in ovarian cancer. *J. Exp. Clin. Cancer Res.* 41: 129.
- Bai, S., et al. 2023. The stromal-tumor amplifying STC1-Notch1 feedforward signal promotes the stemness of hepatocellular carcinoma. *J. Transl. Med.* 21: 236.

## RESEARCH USE

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