

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 μ 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 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 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).

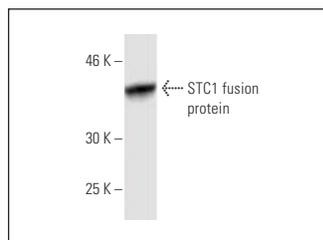
Suitable for use as control antibody for STC1 siRNA (h): sc-44126, STC1 siRNA (m): sc-44871, STC1 shRNA Plasmid (h): sc-44126-SH, STC1 shRNA Plasmid (m): sc-44871-SH, STC1 shRNA (h) Lentiviral Particles: sc-44126-V and STC1 shRNA (m) Lentiviral Particles: sc-44871-V.

Molecular Weight of STC1: 31 kDa.

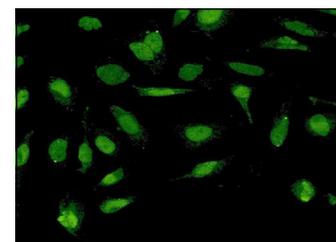
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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 κ BP-FITC: sc-516140 or m-IgG κ 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.