SANTA CRUZ BIOTECHNOLOGY, INC.

STC2 (2B11): sc-293388

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 homoeostasis 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

1. Chang, A.C., et al. 1998. Identification of a second stanniocalcin cDNA in mouse and human: stanniocalcin 2. Mol. Cell. Endocrinol. 141: 95-99.
2. Honda, S., et al. 1999. Regulation by 1α,25-dihydroxyvitamin D_3 of expression of stanniocalcin messages in the rat kidney and ovary. FEBS Lett. 459: 119-122.
3. Jellinek, D.A., et al. 2000. Stanniocalcin 1 and 2 are secreted as phosphoproteins from human fibrosarcoma cells. Biochem. J. 350: 453-461.
4. 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.
5. 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.
6. McCudden, C.R., et al. 2002. Characterization of mammalian stanniocalcin receptors. Mitochondrial targeting of ligand and receptor for regulation of cellular metabolism. J. Biol. Chem. 277: 45249-45258.
7. Yahata, K., et al. 2003. Regulation of stanniocalcin 1 and 2 expression in the kidney by klotho gene. Biochem. Biophys. Res. Commun. 310: 128-134.
8. Paciga, M., et al. 2004. Regulation of luteal cell big stanniocalcin production and secretion. Endocrinology 145: 4204-4212.

CHROMOSOMAL LOCATION

Genetic locus: STC2 (human) mapping to 5q35.1; Stc2 (mouse) mapping to 11 A4.

SOURCE

STC2 (2B11) is a mouse monoclonal antibody raised against amino acids 1-302 of STC2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

STC2 (2B11) is recommended for detection of STC2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for STC2 siRNA (h): sc-44127, STC2 siRNA (m): sc-153883, STC2 shRNA Plasmid (h): sc-44127-SH, STC2 shRNA Plasmid (m): sc-153883-SH, STC2 shRNA (h) Lentiviral Particles: sc-44127-V and STC2 shRNA (m) Lentiviral Particles: sc-153883-V.

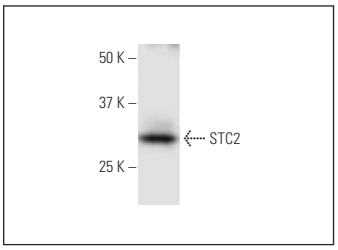
Molecular Weight of STC2: 33 kDa.

Positive Controls: PC-12 cell lysate: sc-2250.

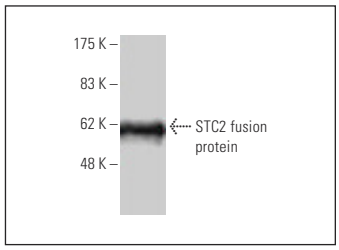
RECOMMENDED SUPPORT REAGENTS

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

DATA



STC2 (2B11): sc-293388. Western blot analysis of STC2 expression in PC-12 whole cell lysate.



STC2 (2B11): sc-293388. Western blot analysis of human recombinant STC2 fusion protein.

SELECT PRODUCT CITATIONS

1. Li, R., et al. 2024. Stanniocalcin 2 regulates autophagy and ferroptosis in mammary epithelial cells of dairy cows through the mechanistic target of rapamycin complex 1 pathway. J. Nutr. 154: 1790-1802.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. 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 for detailed protocols and support products.