SANTA CRUZ BIOTECHNOLOGY, INC.

Stim2 (N-18): sc-79110

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Ca^{2+} influx is essential for a variety of cellular functions, such as secretion and transcription. Stim1 (stromal interaction molecule 1) is a ubiquitously expressed cell surface transmembrane glycoprotein that plays a role in mediating Ca^{2+} influx following the depletion of intracellular Ca^{2+} stores. Stim1 functions in the endoplasmic reticulum (ER) where it acts as a Ca^{2+} sensor via its EF-hand domain and is capable of causing large conformational changes in response to varying Ca^{2+} levels. When Ca^{2+} levels drop, Stim1 translocates from the ER to the plasma membrane, where it activates the Ca^{2+} release-activated Ca^{2+} (CRAC) channel subunit, Orai1. Stim2 (stromal interaction molecule 2) is a 746 amino acid protein that contains one EF-hand domain and one SAM domain and localizes to the ER as a single-pass type I membrane protein. Stim2 exists as an oligomer with Stim1 and plays an essential role in the inhibition of Stim1-mediated Ca^{2+} influx.

REFERENCES

1. Williams, R.T., et al. 2001. Identification and characterization of the STIM (stromal interaction molecule) gene family: coding for a novel class of transmembrane proteins. Biochem. J. 357: 673-685.
2. Liou, J., et al. 2005. STIM is a Ca^{2+} sensor essential for Ca^{2+}-store-depletion-triggered Ca^{2+} influx. Curr. Biol. 15: 1235-1241.
3. Soboloff, J., et al. 2006. STIM2 is an inhibitor of STIM1-mediated store-operated Ca^{2+} entry. Curr. Biol. 16: 1465-1470.
4. Brandman, O., et al. 2007. STIM2 is a feedback regulator that stabilizes basal cytosolic and endoplasmic reticulum Ca^{2+} levels. Cell 131: 1327-1339.
5. Zheng, L., et al. 2008. Biophysical characterization of the EF-hand and SAM domain containing Ca^{2+} sensory region of STIM1 and STIM2. Biochem. Biophys. Res. Commun. 369: 240-246.
6. Bojarski, L., et al. 2009. Presenilin-dependent expression of STIM proteins and dysregulation of capacitative Ca^{2+} entry in familial Alzheimer's disease. Biochim. Biophys. Acta 1793: 1050-1057.

CHROMOSOMAL LOCATION

Genetic locus: STIM2 (human) mapping to 4p15.2; Stim2 (mouse) mapping to 5 C1.

SOURCE

Stim2 (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Stim2 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-79110 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

Stim2 (N-18) is recommended for detection of Stromal interaction molecule 2 precursor 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)], 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).

Stim2 (N-18) is also recommended for detection of Stromal interaction molecule 2 precursor in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for Stim2 siRNA (h): sc-76591, Stim2 siRNA (m): sc-76592, Stim2 shRNA Plasmid (h): sc-76591-SH, Stim2 shRNA Plasmid (m): sc-76592-SH, Stim2 shRNA (h) Lentiviral Particles: sc-76591-V and Stim2 shRNA (m) Lentiviral Particles: sc-76592-V.

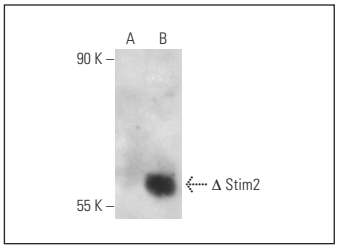
Molecular Weight of Stim2: 105 kDa.

Positive Controls: Stim2 (h): 293T Lysate: sc-112654.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Stim2 (N-18): sc-79110. Western blot analysis of Stim2 expression in non-transfected: sc-117752 (**A**) and truncated human Stim2 transfected: sc-112654 (**B**) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.