SANTA CRUZ BIOTECHNOLOGY, INC.

Stim1 (F-2): sc-393705

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Ca^{2+} influx is essential for a variety of cellular functions including, secretion and transcription. Stromal interaction molecule 1 (Stim1) 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 which causes large conformational changes. 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, TMEM142A/Orai1. Stim2 is a potent inhibitor of Stim1-mediated store-operated calcium (SOC) entry. Stim1 is implicated in tumor growth suppression and stromal-hematopoietic cell interactions.

REFERENCES

1. Manji, S.S., et al. 2000. Stim1: a novel phosphoprotein located at the cell surface. Biochim. Biophys. Acta 1481: 147-155.
2. Williams, R.T., et al. 2002. Stromal interaction molecule 1 (Stim1), a transmembrane protein with growth suppressor activity, contains an extracellular SAM domain modified by N-linked glycosylation. Biochim. Biophys. Acta 1596: 131-137.
3. Zhang, S.L., et al. 2005. Stim1 is a Ca^{2+} sensor that activates CRAC channels and migrates from the Ca^{2+} store to the plasma membrane. Nature 437: 902-905.
4. Mignen, O., et al. 2007. Stim1 regulates Ca^{2+} entry via arachidonate-regulated Ca^{2+}-selective (ARC) channels without store depletion or translocation to the plasma membrane. J. Physiol. 579: 703-715.
5. Hauser, C.T. and Tsien, R.Y. 2007. A hexahistidine-Zn^{2+}-dye label reveals Stim1 surface exposure. Proc. Natl. Acad. Sci. USA 104: 3693-3697.
6. Liao, Y., et al. 2007. Orai proteins interact with TRPC channels and confer responsiveness to store depletion. Proc. Natl. Acad. Sci. USA 104: 4682-4687.

CHROMOSOMAL LOCATION

Genetic locus: STIM1 (human) mapping to 11p15.4; Stim1 (mouse) mapping to 7 E3.

SOURCE

Stim1 (F-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 33-54 within an N-terminal extracellular domain of Stim1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-393705 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Stim1 (F-2) is recommended for detection of Stim1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

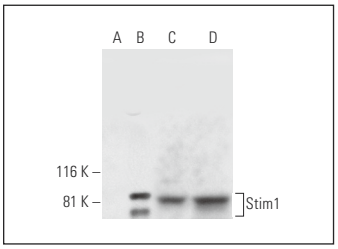
Stim1 (F-2) is also recommended for detection of Stim1 in additional species, including bovine.

Suitable for use as control antibody for Stim1 siRNA (h): sc-76589, Stim1 siRNA (m): sc-76590, Stim1 siRNA (r): sc-270596, Stim1 shRNA Plasmid (h): sc-76589-SH, Stim1 shRNA Plasmid (m): sc-76590-SH, Stim1 shRNA Plasmid (r): sc-270596-SH, Stim1 shRNA (h) Lentiviral Particles: sc-76589-V, Stim1 shRNA (m) Lentiviral Particles: sc-76590-V and Stim1 shRNA (r) Lentiviral Particles: sc-270596-V.

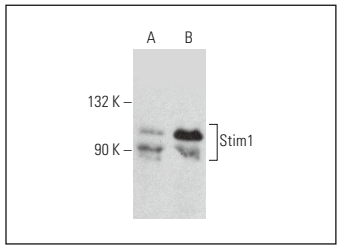
Molecular Weight of Stim1: 86 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, Stim1 (h2): 293T Lysate: sc-171959 or HeLa whole cell lysate: sc-2200.

DATA



Stim1 (F-2): sc-393705. Western blot analysis of Stim1 expression in non-transfected 293T: sc-117752 (**A**), human transfected 293T: sc-171959 (**B**), HeLa (**C**) and Hep G2 (**D**) whole cell lysates.



Stim1 (A-8): sc-393705. Western blot analysis of Stim1 expression in Hep G2 (**A**) and K-562 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Shi, J., et al. 2017. Store-operated interactions between plasmalemmal Stim1 and TRPC1 proteins stimulate PLCβ1 to induce TRPC1 channel activation in vascular smooth muscle cells. J. Physiol. 595: 1039-1058.

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.