

# Stim1 (N-19): sc-79106

## BACKGROUND

Ca<sup>2+</sup> 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<sup>2+</sup> influx following the depletion of intracellular Ca<sup>2+</sup> stores. Stim1 functions in the endoplasmic reticulum (ER) where it acts as a Ca<sup>2+</sup> sensor via its EF-hand domain, causing large conformational changes. When Ca<sup>2+</sup> levels drop, Stim1 translocates from the ER to the plasma membrane, where it activates the Ca<sup>2+</sup> release-activated Ca<sup>2+</sup> (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-haematopoietic cell interactions.

## REFERENCES

- Manji, S.S., et al. 2000. Stim1: a novel phosphoprotein located at the cell surface. *Biochim. Biophys. Acta* 1481: 147-155.
- 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.
- Zhang, S.L., et al. 2005. Stim1 is a Ca<sup>2+</sup> sensor that activates CRAC channels and migrates from the Ca<sup>2+</sup> store to the plasma membrane. *Nature* 437: 902-905.
- Mignen, O., et al. 2007. Stim1 regulates Ca<sup>2+</sup> entry via arachidonate-regulated Ca<sup>2+</sup>-selective (ARC) channels without store depletion or translocation to the plasma membrane. *J. Physiol.* 579: 703-715.
- Hauser, C.T. and Tsien, R.Y. 2007. A hexahistidine-Zn<sup>2+</sup>-dye label reveals Stim1 surface exposure. *Proc. Natl. Acad. Sci. USA* 104: 3693-3697.
- 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.
- Ambudkar, I.S., et al. 2007. TRPC1: The link between functionally distinct store-operated calcium channels. *Cell Calcium* 42: 213-223.
- Takahashi, Y., et al. 2007. Essential role of the N-terminus of murine Orai1 in store-operated Ca<sup>2+</sup> entry. *Biochem. Biophys. Res. Commun.* 356: 45-52.
- Liou, J., et al. 2007. Live-cell imaging reveals sequential oligomerization and local plasma membrane targeting of stromal interaction molecule 1 after Ca<sup>2+</sup> store depletion. *Proc. Natl. Acad. Sci. USA* 104: 9301-9306.

## CHROMOSOMAL LOCATION

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

## SOURCE

Stim1 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an N-terminal extracellular domain of Stim1 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-79106 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Stim1 (N-19) is recommended for detection of Stim1 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).

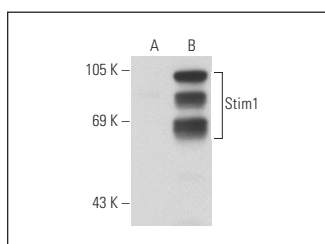
Stim1 (N-19) is also recommended for detection of Stim1 in additional species, including equine, canine, bovine and porcine.

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

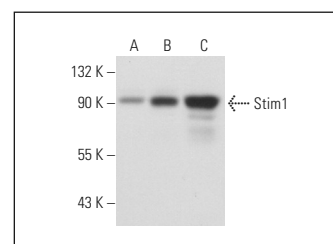
Molecular Weight of Stim1: 86 kDa.

Positive Controls: Stim1 (h2): 293T Lysate: sc-171959 or A-10 cell lysate: sc-3806.

## DATA



Stim1 (N-19): sc-79106. Western blot analysis of Stim1 expression in non-transfected: sc-117752 (A) and human Stim1 transfected: sc-171959 (B) 293T whole cell lysates.



Stim1 (N-19): sc-79106. Western blot analysis of Stim1 expression in non-transfected 293T: sc-117752 (A), human Stim1 transfected 293T: sc-171680 (B) and A-10 (C) whole cell lysates.

## 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.



Try **Stim1 (A-8): sc-166840** or **Stim1 (F-2): sc-393705**, our highly recommended monoclonal alternatives to Stim1 (N-19).