

# Stim2 (D-20): sc-79108

## BACKGROUND

Ca<sup>2+</sup> 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<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 and is capable of causing large conformational changes in response to varying Ca<sup>2+</sup> levels. 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, 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<sup>2+</sup> influx.

## REFERENCES

- 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.
- Liou, J., et al. 2005. Stim is a Ca<sup>2+</sup> sensor essential for Ca<sup>2+</sup>-store-depletion-triggered Ca<sup>2+</sup> influx. *Curr. Biol.* 15: 1235-1241.
- Soboloff, J., et al. 2006. Stim2 is an inhibitor of Stim1-mediated store-operated Ca<sup>2+</sup> entry. *Curr. Biol.* 16: 1465-1470.
- Brandman, O., et al. 2007. Stim2 is a feedback regulator that stabilizes basal cytosolic and endoplasmic reticulum Ca<sup>2+</sup> levels. *Cell* 131: 1327-1339.
- Zheng, L., et al. 2008. Biophysical characterization of the EF-hand and SAM domain containing Ca<sup>2+</sup> sensory region of Stim1 and Stim2. *Biochem. Biophys. Res. Commun.* 369: 240-246.
- Bojarski, L., et al. 2008. Presenilin-dependent expression of STIM proteins and dysregulation of capacitative Ca<sup>2+</sup> 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 (D-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region 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-79108 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 (D-20) 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), 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 (D-20) 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.

## 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) 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.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.