

# Stim2 (S-20): sc-79111

## 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., Manji, S.S., Parker, N.J., Hancock, M.S., Van Stekelenburg, L., Eid, J.P., Senior, P.V., Kazenwadel, J.S., Shandala, T., Saint, R., Smith, P.J. and Dziadek, M.A. 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., Kim, M.L., Heo, W.D., Jones, J.T., Myers, J.W., Ferrell, J.E. and Meyer, T. 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., Spassova, M.A., Hewavitharana, T., He, L.P., Xu, W., Johnstone, L.S., Dziadek, M.A. and Gill, D.L. 2006. STIM2 is an inhibitor of STIM1-mediated store-operated Ca<sup>2+</sup> Entry. *Curr. Biol.* 16: 1465-1470.
- Brandman, O., Liou, J., Park, W.S. and Meyer, T. 2007. STIM2 is a feedback regulator that stabilizes basal cytosolic and endoplasmic reticulum Ca<sup>2+</sup> levels. *Cell* 131: 1327-1339.
- Zheng, L., Stathopoulos, P.B., Li, G.Y. and Ikura, M. 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

Stim2 (S-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain 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-79111 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Stim2 (S-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), 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 (S-20) is also recommended for detection of Stromal interaction molecule 2 precursor in additional species, including equine, canine, bovine, porcine 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.

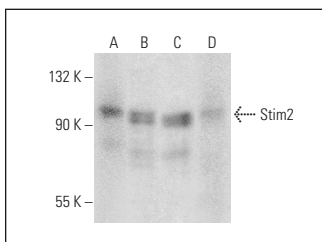
Molecular Weight of Stim2: 105 kDa.

Positive Controls: Y79 cell lysate: sc-2240, PC-12 cell lysate: sc-2250 or NIH/3T3 whole cell lysate: sc-2210.

## 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 (S-20): sc-79111. Western blot analysis of Stim2 expression in Y79 (A), PC-12 (B) and NIH/3T3 (C) whole cell lysates and mouse pancreas tissue extract (D).

## 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.