SANTA CRUZ BIOTECHNOLOGY, INC.

Stim1 (m): 293T Lysate: sc-127602

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, causing large conformational changes. When Ca^{2+} levels drop, Stim1 translocates from the ER to the plasma membrane, where it activates the calcium release-activated calcium (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., Parker, N.J., Williams, R.T., van Stekelenburg, L., Pearson, R.B., Dziadek, M. and Smith, P.J. 2000. Stim1: a novel phosphoprotein located at the cell surface. Biochim. Biophys. Acta 1481: 147-155.
2. Williams, R.T., Senior, P.V., Van Stekelenburg, L., Layton, J.E., Smith, P.J. and Dziadek, M.A. 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., Yu, Y., Roos, J., Kozak, J.A., Deerinck, T.J., Ellisman, M.H., Stauderman, K.A. and Cahalan, M.D. 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., Thompson, J.L. and Shuttleworth, T.J. 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., Erxleben, C., Yildirim, E., Abramowitz, J., Armstrong, D.L. and Birnbaumer, L. 2007. Orai proteins interact with TRPC channels and confer responsiveness to store depletion. Proc. Natl. Acad. Sci. USA 104: 4682-4687.
7. Ambudkar, I.S., Ong, H.L., Liu, X., Bandyopadhyay, B. and Cheng, K.T. 2007. TRPC1: the link between functionally distinct store-operated calcium channels. Cell Calcium 42: 213-223.
8. Takahashi, Y., Murakami, M., Watanabe, H., Hasegawa, H., Ohba, T., Munehisa, Y., Nobori, K., Ono, K., Iijima,T. and Ito, H. 2007. Essential role of the N-terminus of murine Orai1 in store-operated Ca^{2+} entry. Biochem. Biophys. Res. Commun. 356: 45-52.
9. Liou, J., Fivaz, M., Inoue, T. and Meyer, T. 2007. Live-cell imaging reveals sequential oligomerization and local plasma membrane targeting of stromal interaction molecule 1 after Ca^{2+} store depletion. Proc. Natl. Acad. Sci. USA 104: 9301-9306.

CHROMOSOMAL LOCATION

Genetic locus: Stim (mouse) mapping to 7 E3.

PRODUCT

Stim1 (m): 293T Lysate represents a lysate of mouse Stim1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

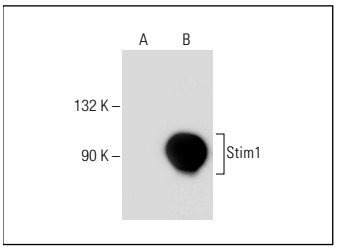
APPLICATIONS

Stim1 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive Stim1 antibodies. Recommended use: 10-20 µl per lane.

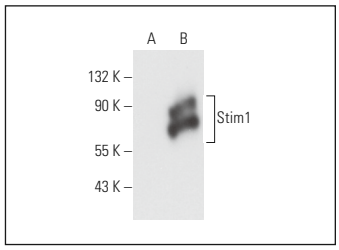
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Stim1 (CDN3H4): sc-66173. is recommended as a positive control antibody for Western Blot analysis of enhanced mouse Stim1 expression in Stim1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

DATA



Stim1 (CDN3H4): sc-66173. Western blot analysis of Stim1 expression in non-transfected: sc-117752 (**A**) and mouse Stim1 transfected: sc-127602 (**B**) 293T whole cell lysates.



Stim1 (D-2): sc-166541. Western blot analysis of Stim1 expression in non-transfected: sc-117752 (**A**) and mouse Stim1 transfected: sc-127602 (**B**) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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.