

# Stim1 (CDN3H4): sc-66173

## 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 which causes 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-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.

## CHROMOSOMAL LOCATION

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

## SOURCE

Stim1 (CDN3H4) is a mouse monoclonal antibody raised against the C-terminal intracellular part of Stim1 of mouse origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Stim1 (CDN3H4) 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) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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.

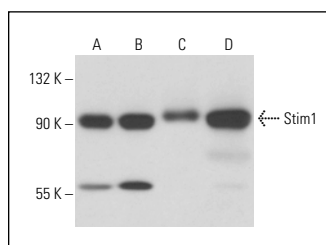
Molecular Weight of Stim1: 86 kDa.

Positive Controls: Stim1 (m): 293T Lysate: sc-127602, rat thymus extract: sc-2401 or Sol8 cell lysate: sc-2249.

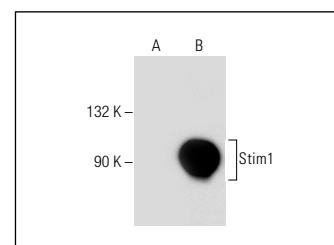
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



Stim1 (CDN3H4): sc-66173. Western blot analysis of Stim1 expression in Sol8 (A) and A-10 (B) whole cell lysates and rat thymus (C) and mouse thymus (D) tissue extracts.



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.

## SELECT PRODUCT CITATIONS

1. Wu, Z.S., et al. 2014. Role of mitofusin-2 in high mobility group box-1 protein-mediated apoptosis of T cells *in vitro*. *Cell. Physiol. Biochem.* 33: 769-783.
2. Tong, B.C., et al. 2016. Familial Alzheimer's disease-associated presenilin 1 mutants promote γ-secretase cleavage of Stim1 to impair store-operated Ca<sup>2+</sup> entry. *Sci. Signal.* 9: ra89.
3. 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.
4. Babaer, D., et al. 2018. High salt induces P-glycoprotein mediated treatment resistance in breast cancer cells through store operated calcium influx. *Oncotarget* 9: 25193-25205.
5. Mizuma, A., et al. 2019. Microglial calcium release-activated calcium (CRAC) channel inhibition improves outcome from experimental traumatic brain injury and microglia-induced neuronal death. *J. Neurotrauma* 36: 996-1007.
6. Ding, C., et al. 2022. Bile acid restrained T cell activation explains cholestasis aggravated hepatitis B virus infection. *FASEB J.* 36: e22468.

## 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.