SANTA CRUZ BIOTECHNOLOGY, INC.

Orai2 (C-12): sc-376749

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The Power to Question

BACKGROUND

Orai2 (orai calcium release-activated calcium modulator 2), also known as CBCIP2 (CAP-binding protein complex-interacting protein 2) or TMEM142B (transmembrane protein 142B), is a 254 amino acid multi-pass membrane protein that belongs to the orai family of proteins. Localizing to the plasma membrane, Orai2 plays an important role in store-operated calcium (SOC) entry, a process involving Ca^{2+} influx and replenishment of Ca^{2+} stores formerly emptied through the action of inositol 1,4,5-trisphosphate production and other Ca^{2+} mobilizing agents. CRAC channels are responsible for mediating calcium influx in T-cells and play an important role in the immune response. Orai2 specifically increases the Ca^{2+}-selective current through coaction with the Ca^{2+} sensor Stim1.

REFERENCES

1. Mercer, J.C., et al. 2006. Large store-operated calcium selective currents due to co-expression of Orai1 or Orai2 with the intracellular calcium sensor, Stim1. J. Biol. Chem. 281: 24979-24990.
2. Feske, S., et al. 2006. A mutation in Orai1 causes immune deficiency by abrogating CRAC channel function. Nature 441: 179-185.
3. DeHaven, W.I., et al. 2007. Calcium inhibition and calcium potentiation of Orai1, Orai2, and Orai3 calcium release-activated calcium channels. J. Biol. Chem. 282: 17548-17556.
4. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 610929. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Peinelt, C., et al. 2008. 2-aminoethoxydiphenyl borate directly facilitates and indirectly inhibits Stim1-dependent gating of CRAC channels. J. Physiol. 586: 3061-3073.

CHROMOSOMAL LOCATION

Genetic locus: ORAI2 (human) mapping to 7q22.1; Orai2 (mouse) mapping to 5 G2.

SOURCE

Orai2 (C-12) is a mouse monoclonal antibody raised against amino acids 1-49 mapping at the N-terminus of Orai2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

Orai2 (C-12) is recommended for detection of Orai2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for Orai2 siRNA (h): sc-76003, Orai2 siRNA (m): sc-76004, Orai2 shRNA Plasmid (h): sc-76003-SH, Orai2 shRNA Plasmid (m): sc-76004-SH, Orai2 shRNA (h) Lentiviral Particles: sc-76003-V and Orai2 shRNA (m) Lentiviral Particles: sc-76004-V.

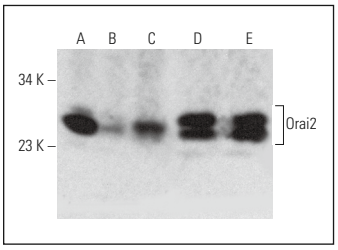
Molecular Weight of Orai2: 28 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, NCI-H1299 whole cell lysate: sc-364234 or Daudi cell lysate: sc-2415.

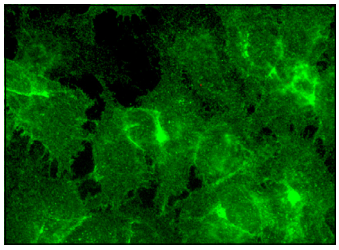
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Orai2 (C-12): sc-376749. Western blot analysis of Orai2 expression in MCF7 (**A**), NCI-H1299 (**B**), Daudi (**C**), NRK (**D**) and C6 (**E**) whole cell lysates.



Orai2 (C-12): sc-376749. Immunofluorescence staining of formalin-fixed Hep G2 cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Chen, Y.F., et al. 2019. The distinct role of Stim1 and Stim2 in the regulation of store-operated Ca^{2+} entry and cellular function. J. Cell. Physiol. 234: 8727-8739.
2. Lin, Y.S., et al. 2021. STIM1 controls the focal adhesion dynamics and cell migration by regulating SOCE in osteosarcoma. Int. J. Mol. Sci. 23: 162.

RESEARCH USE

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