

ORAI2 Antibody

Catalog # ASC10528

Product Information

Application	WB, IF, ICC, E
Primary Accession	Q96SN7
Other Accession	Q96SN7 , 74732728
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	28570
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	ORAI2 antibody can be used for detection of ORAI2 by Western blot at 1 - 4 μ g/mL. Antibody can also be used for immunocytochemistry starting at 5 μ g/mL. For immunofluorescence start at 20 μ g/mL.

Additional Information

Gene ID	80228
Other Names	ORAI2 Antibody: CBCIP2, C7orf19, MEM142B, TMEM142B, CBCIP2, PP1729, Protein orai-2, CAP-binding protein complex-interacting protein 2, ORAI calcium release-activated calcium modulator 2
Target/Specificity	ORAI2; At least two isoforms of ORAI2 are known to exist; this antibody will detect both isoforms. ORAI antibody is predicted not to cross-react with ORAI1 or ORAI3.
Reconstitution & Storage	ORAI2 antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	ORAI2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ORAI2
Synonyms	C7orf19, CBCIP2, TMEM142B
Function	Pore-forming subunit of inward rectifying Ca(2+) release- activated Ca(2+) (CRAC) channels. Assembles with ORAI1 and ORAI3 to form hexameric CRAC channels that mediate Ca(2+) influx upon depletion of endoplasmic reticulum Ca(2+) store and channel activation by Ca(2+) sensor STIM1, a process known

as store-operated Ca^{2+} entry (SOCE). Various pore subunit combinations may account for distinct CRAC channel spatiotemporal and cell-type specific dynamics. ORAI1 mainly contributes to the generation of Ca^{2+} plateaus involved in sustained Ca^{2+} entry and is dispensable for cytosolic Ca^{2+} oscillations, whereas ORAI2 and ORAI3 generate oscillatory patterns. CRAC channels assemble in Ca^{2+} signaling microdomains where Ca^{2+} influx is coupled to calmodulin and calcineurin signaling and activation of NFAT transcription factors recruited to ORAI1 via AKAP5. CRAC channels are the main pathway for Ca^{2+} influx in T cells and promote the immune response to pathogens by activating NFAT-dependent cytokine and chemokine transcription.

Cellular Location

Cell membrane; Multi-pass membrane protein. Note=Colocalizes with STIM1 upon store depletion.

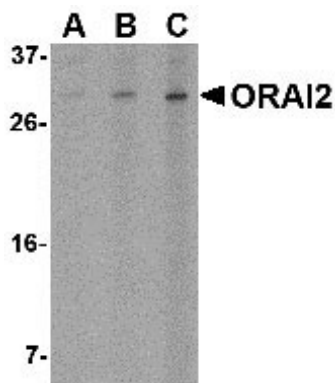
Background

ORAI2 Antibody: Antigen stimulation of immune cells triggers Ca^{++} entry through Ca^{++} release-activated Ca^{++} (CRAC) channels. ORAI2 is one of two mammalian homologs to ORAI1, a recently identified four-transmembrane spanning protein that is an essential component of CRAC. Like ORAI1, ORAI2 has been shown to function as a highly selective Ca^{++} plasma membrane channel that is gated through interactions with STIM1, the store-activated endoplasmic reticulum Ca^{++} sensor, although at a lesser efficacy than ORAI1.

References

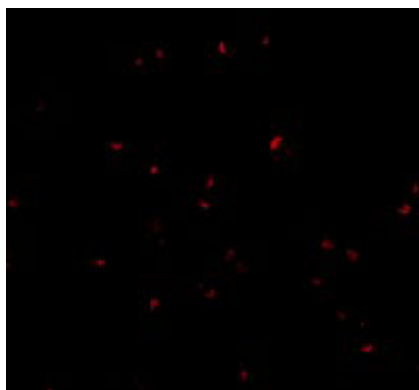
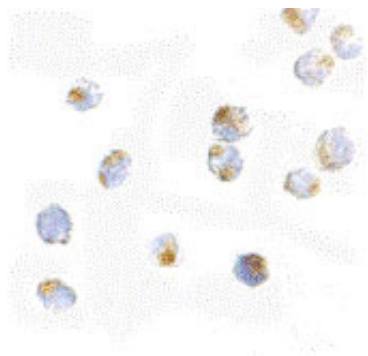
Lewis RS. Calcium signaling mechanisms in T lymphocytes. *Annu. Rev. Immunol.* 2001; 19:497-521.
Feske S, Gwack Y, Prakriya M, et al. A mutation in Orai1 causes immune deficiency by abrogating CRAC channel function. *Nature* 2006; 441:179-85.
Soboloff J, Spassova MA, Dziadek MA, et al. Calcium signals mediated by STIM and Orai proteins - a new paradigm in inter-organelle communication. *Biochim. Biophys. Acta.* 2006; 1763:1161-8.
Mercer JC, DeHaven WI, Smyth JT, et al. Large store-operated calcium selective currents due to co-expression of Orai1 or Orai2 with the intracellular calcium sensor, Stim1. *J. Biol. Chem.* 2006; 281:24979-90.

Images



Western blot analysis of ORAI2 in Jurkat cell lysate with ORAI2 antibody at (A) 1, (B) 2 and (C) 4 $\mu\text{g/mL}$.

Immunocytochemistry of ORAI2 in Jurkat cells with ORAI2 antibody at 5 $\mu\text{g/mL}$.



Immunofluorescence of ORAI2 in Jurkat cells with ORAI2 antibody at 20 $\mu\text{g/mL}$.

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