

ORAI3 Antibody [1B4F1]
Catalog # ASC11998**Specification****ORAI3 Antibody [1B4F1] - Product Information**

Application	WB, E
Primary Accession	Q9BRQ5
Other Accession	Q9BRQ5 , 74732916
Reactivity	Human, Rat
Host	Mouse
Clonality	Monoclonal
Isotype	IgG2b
Application Notes	ORAI3 antibody can be used for detection of ORAI3 by Western blot at 2 µg/mL.

ORAI3 Antibody [1B4F1] - Additional Information

Gene ID	93129
Target/Specificity	
ORAI3;	

Reconstitution & Storage

ORAI3 monoclonal antibody can be stored at -20°C, stable for one year.

Precautions

ORAI3 Antibody [1B4F1] is for research use only and not for use in diagnostic or therapeutic procedures.

ORAI3 Antibody [1B4F1] - Protein Information

Name ORAI3

Synonyms TMEM142C

Function

Pore-forming subunit of two major inward rectifying Ca(2+) channels at the plasma membrane: Ca(2+) release-activated Ca(2+) (CRAC) channels and arachidonate-regulated Ca(2+)-selective (ARC) channels (PubMed:16807233, PubMed:17442569, PubMed:19182790, PubMed:19622606, PubMed:19706554, PubMed:20354224, PubMed:32415068). Assembles with ORAI1 and ORAI2 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 (PubMed:16807233, PubMed:17442569, PubMed:19182790, PubMed:19706554, PubMed:20354224, PubMed:32415068). Assembles with ORAI1 to form channels that mediate store-independent Ca^{2+} influx in response to inflammatory metabolites arachidonate or its derivative leukotriene C4, termed ARC and LRC channels respectively (PubMed:19622606, PubMed:32415068).

Cellular Location

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

Tissue Location

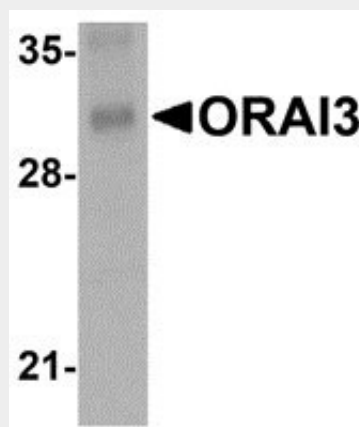
Expressed in both naive and effector T helper cells with higher levels in effector cells.

ORAI3 Antibody [1B4F1] - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

ORAI3 Antibody [1B4F1] - Images



Western blot analysis of ORAI3 in rat lung tissue lysate with ORAI3 antibody at 2 µg/mL.

ORAI3 Antibody [1B4F1] - Background

ORAI3 Monoclonal Antibody: Antigen stimulation of immune cells triggers Ca^{++} entry through Ca^{++} release-activated Ca^{++} (CRAC) channels. ORAI3 is one of two mammalian homologs to ORAI1, a recently identified four-transmembrane spanning protein that is an essential component of CRAC. All three homologs have been shown to function as Ca^{++} plasma membrane channels gated through interactions with STIM1, the store-activated endoplasmic reticulum Ca^{++} sensor. However, ORAI3 channels failed to produce detectable Ca^{++} selective currents in cells co-transfected with ORAI3 and STIM1, indicating that ORAI3 channels undergo a lesser degree of depotentiation than ORAI1 or ORAI2. Na^{+} currents through ORAI1, 2 and 3 channels were equally inhibited by extracellular Ca^{++} , indicating that each have similar affinities for Ca^{++} within the selectivity filter. This antibody is predicted to have no cross-reactivity to ORAI1 or ORAI2. Larger molecular weight bands are sometimes seen in SDS-PAGE; these may represent post-translationally modified ORAI 3.

ORAI3 Antibody [1B4F1] - 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.