

ORAI1 Antibody [3F6H5]
Catalog # ASC12007**Specification****ORAI1 Antibody [3F6H5] - Product Information**

Application	WB, IHC-P, IF, E
Primary Accession	Q96D31
Other Accession	Q96D31 , 84876
Reactivity	Human, Mouse, Rat
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1
Calculated MW	Predicted: 33 kDa
Application Notes	Observed: 56 kDa KDa ORAI1 antibody can be used for detection of ORAI1 by Western blot at 1 - 2 µg/mL. Antibody can also be used for immunohistochemistry starting at 2.5 µg/mL. For immunofluorescence start at 20 µg/mL.

ORAI1 Antibody [3F6H5] - Additional InformationGene ID **84876****Target/Specificity**

Mouse monoclonal ORAI1 antibody was raised against a 16 amino acid synthetic peptide from near the carboxy terminus of human ORAI1.

Reconstitution & Storage

ORAI1 monoclonal antibody can be stored at -20°C, stable for one year.

Precautions

ORAI1 Antibody [3F6H5] is for research use only and not for use in diagnostic or therapeutic procedures.

ORAI1 Antibody [3F6H5] - Protein Information

Name ORAI1 {ECO:0000303|PubMed:16921383, ECO:0000312|HGNC:HGNC:25896}

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 (Probable) (PubMed:16645049, PubMed:16733527, PubMed:16807233, PubMed:16921383, PubMed:19249086)

target="_blank">19249086, PubMed:19706554, PubMed:23307288, PubMed:26956484, PubMed:28219928). Assembles with ORAI2 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. Activates NFATC2/NFAT1 and NFATC3/NFAT4-mediated transcriptional responses. 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:16582901, PubMed:17442569, PubMed:19182790, PubMed:20354224, PubMed:22641696, PubMed:26221052, PubMed:32415068, PubMed:33941685). Assembles with ORAI3 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). Plays a prominent role in Ca(2+) influx at the basolateral membrane of mammary epithelial cells independently of the Ca(2+) content of endoplasmic reticulum or Golgi stores. May mediate transepithelial transport of large quantities of Ca(2+) for milk secretion (By similarity) (PubMed:20887894).

Cellular Location

Cell membrane; Multi-pass membrane protein. Basolateral cell membrane {ECO:0000250|UniProtKB:Q8BWG9}; Multi-pass membrane protein. Note=Upon store depletion, colocalizes with STIM1 in membrane punctae at ER-PM junctions (PubMed:19182790, PubMed:19249086, PubMed:26221052, PubMed:27185316) [Isoform beta]: Cell membrane

Tissue Location

Expressed in naive CD4 and CD8 T cells (at protein level) (PubMed:26956484). Expressed at similar levels in naive and effector T helper cells (PubMed:20354224)

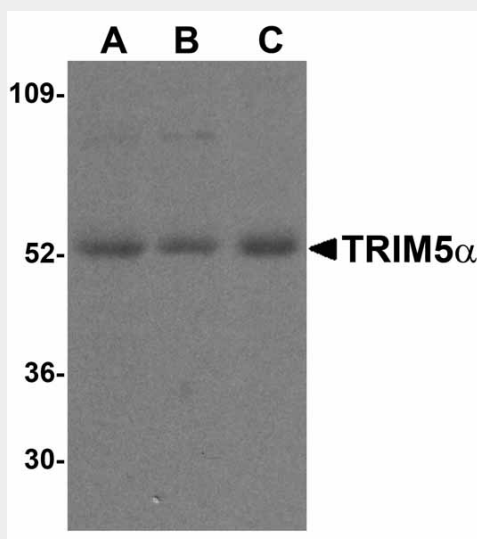
ORAI1 Antibody [3F6H5] - Protocols

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](#)

ORAI1 Antibody [3F6H5] - Images



Western blot analysis of TRIM5 alpha expression in human stomach (A), thymus (B), and uterus (C) cell lysate with TRIM5 alpha antibody at 2 µg/mL.

ORAI1 Antibody [3F6H5] - Background

ORAI1 Monoclonal Antibody: Antigen stimulation of immune cells triggers Ca^{++} entry through Ca^{++} release-activated Ca^{++} (CRAC) channels. ORAI1 is a recently identified four-transmembrane spanning protein that is an essential component of CRAC. A missense mutation in this protein in humans is the cause of one form of hereditary severe combined immune deficiency (SCID) which results in ablated T-cell Ca^{++} entry. It has been suggested that ORAI1 functions as a highly selective Ca^{++} plasma membrane channel that is gated through interactions with STIM1, the store-activated endoplasmic reticulum Ca^{++} sensor. ORAI1 often migrates at a higher than expected molecular weight in SDS-PAGE. This antibody is predicted to have no cross-reactivity to ORAI2 or ORAI3.

ORAI1 Antibody [3F6H5] - 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.