

Anti-Orai1 Antibody
Catalog # ABO11166**Specification****Anti-Orai1 Antibody - Product Information**

Application	WB
Primary Accession	O96D31
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

Description

Rabbit IgG polyclonal antibody for Calcium release-activated calcium channel protein 1(Orai1) detection. Tested with WB in Human;Mouse;Rat.

Reconstitution

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-Orai1 Antibody - Additional Information

Gene ID 84876

Other Names

Calcium release-activated calcium channel protein 1, Protein orai-1, Transmembrane protein 142A, ORAI1, CRACM1, TMEM142A

Calculated MW

32668 MW KDa

Application Details

Western blot, 0.1-0.5 µg/ml, Human, Mouse, Rat

Subcellular Localization

Cell membrane ; Multi-pass membrane protein . Cytoplasmic vesicle, autophagosome . Isoform beta is more mobile in the plasma membrane. Colocalizes with UBQLN1 in the autophagosome. .

Protein Name

Calcium release-activated calcium channel protein 1

Contents

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na₂HPO₄, 0.05mg Thimerosal, 0.05mg NaN₃.

Immunogen

A synthetic peptide corresponding to a sequence at the C-terminus of human Orai1(278-301aa EFARLQDQLDHRGDHPLTPGSHYA), different from the related rat and mouse sequences by two amino acids.

Purification

Immunogen affinity purified.

Cross Reactivity

No cross reactivity with other proteins

Storage

At -20°C for one year. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for a longer time. Avoid repeated freezing and thawing.

Sequence Similarities

Belongs to the Orai family.

Anti-Orai1 Antibody - 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, 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

target="_blank">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

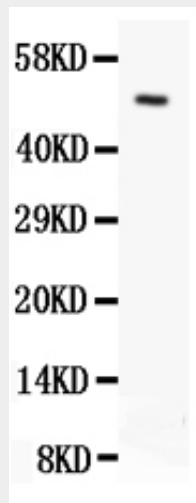
Expressed in naive CD4 and CD8 T cells (at protein level) (PubMed:26956484). Expressed at similar levels in naive and effector T helper cells (PubMed:20354224)

Anti-Orai1 Antibody - 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](#)

Anti-Orai1 Antibody - Images



Anti- Orai1 antibody, ABO11166, Western blotting All lanes: Anti Orai1 (ABO11166) at 0.5ug/ml WB: SKOV Whole Cell Lysate at 40ug Predicted bind size: 33KD Observed bind size: 50KD

Anti-Orai1 Antibody - Background

ORAI1 (ORAI calcium release-activated calcium modulator 1), also known as CRACM1, TMEM142A, Calcium release-activated calcium channel protein 1, Protein orai-1, Transmembrane protein 142A, FLJ14466, is a calcium selective ion channel that in humans is encoded by the ORAI1 gene. Orai1 channels play an important role in the activation of T-lymphocytes. The loss of function mutation of Orai1 causes a severe combined immunodeficiency (SCID) in humans. The mammalian orai family has two additional homologs, orai2 and orai3. Orai proteins share no homology with any

other ion channel family of any other known proteins. They have 4 transmembrane domains and form tetramers. Prakriya et al.(2006) showed that ORAI1 is a PM protein, and that CRAC channel function is sensitive to mutation of 2 conserved acidic residues in the transmembrane segments. Glu106-to-asp(E106D) and glu190-to-gln(E190Q) substitutions in transmembrane helices 1 and 3, respectively, diminished calcium ion influx, increased current carried by monovalent cations, and rendered the channel permeable to cesium ion. Prakriya et al.(2006) showed that ORAI1 is a PM protein, and that CRAC channel function is sensitive to mutation of 2 conserved acidic residues in the transmembrane segments.