

## ORAI1 Antibody

*ORAI1: Transmembrane protein 142A, TMEM142A, Calcium release-activated calcium channel protein 1*

**CATALOG No.:4041**

### BACKGROUND:

Antigen stimulation of immune cells triggers  $Ca^{++}$  entry through  $Ca^{++}$  release-activated  $Ca^{++}$  (CRAC) channels (1 for review). 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 (2). 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 (3). 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.

### SOURCE:

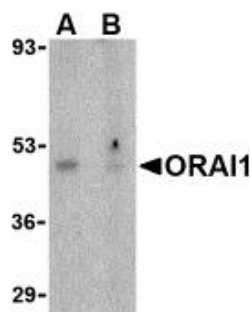
Rabbit polyclonal ORAI1 antibody was raised against an 18 amino acid peptide from near the amino terminus of human ORAI1 (GenBank accession no. Q96D31).

### APPLICATIONS:

ORAI1 antibody can be used for detection of ORAI1 by Western blot at 0.5 – 1  $\mu$ g/ml. (Optimal dilution should be determined by user.) Human ovary tissue lysate can be used as positive control. This ORAI1 antibody can also be used to detect ORAI1 in immunohistochemistry applications. ORAI1 antibody is human and mouse reactive. **For research use only.**

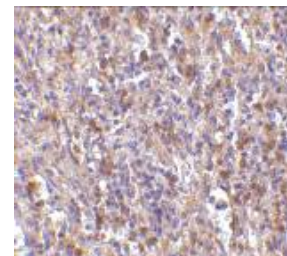
### STORAGE:

ORAI1 antibody is supplied as immunoaffinity purified IgG in PBS containing 0.02% sodium azide. Store at 4°C, stable for one year.



Western blot analysis of ORAI1 in human ovary tissue lysate with ORAI1 antibody at 1  $\mu$ g/ml in the (A) absence or (B) presence of blocking peptide.

Immunohistochemistry of ORAI1 in human spleen tissue with ORAI1 antibody at 10  $\mu$ g/ml.



### RELATED PRODUCTS:

Blocking Peptide, Catalog No. **4041P**.  
Human Ovary Tissue Lysate, Catalog No. **1316**.  
ORAI1 Antibody (CT), Catalog No. **4281**.  
ORAI2 Antibody (CT), Catalog No. **4111**.  
ORAI3 Antibody (NT), Catalog No. **4117**.  
STIM1 Antibody (CT), Catalog No. **4119**.  
STIM2 Antibody (CT), Catalog No. **4123**.

### REFERENCES:

1. Lewis RS. Calcium signaling mechanisms in T lymphocytes. *Annu. Rev. Immunol.* 2001; 19:497-521.
2. 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.
3. 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.  
(07-02D)