

# Orai1 (P-20): sc-74778

## BACKGROUND

Orai1 (ORAI calcium release-activated calcium modulator 1), also known as ORAT1, CRACM1 (calcium release-activated calcium modulator 1) or TMEM142A (transmembrane protein 142A), is a 301 amino acid multi-pass membrane protein that belongs to the Orai family of proteins. Localizing to the plasma membrane, Orai1 plays an important role in store-operated calcium (SOC) entry, a process involving  $Ca^{2+}$  influx and replenishment of  $Ca^{2+}$  stores formerly emptied through the action of inositol 1,4,5-trisphosphate production and other  $Ca^{2+}$  mobilizing agents. Specifically, Orai1 functions as a pore sub-unit of the store-operated calcium release-activated calcium channel (CRAC) and is essential for proper function of the CRAC channel. CRAC channels are responsible for mediating calcium influx in T cells and play an important role in the immune response. Mutations in the gene encoding Orai1 can result in severe combined immunodeficiency (SCID).

## CHROMOSOMAL LOCATION

Genetic locus: ORAI1 (human) mapping to 12q24.31; Orai1 (mouse) mapping to 5 F.

## SOURCE

Orai1 (P-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an N-terminal cytoplasmic domain of Orai1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-74778 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

Orai1 (P-20) is recommended for detection of Orai1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Orai1 siRNA (h): sc-76001, Orai1 siRNA (m): sc-76002, Orai1 shRNA Plasmid (h): sc-76001-SH, Orai1 shRNA Plasmid (m): sc-76002-SH, Orai1 shRNA (h) Lentiviral Particles: sc-76001-V and Orai1 shRNA (m) Lentiviral Particles: sc-76002-V.

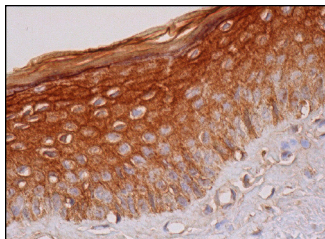
Molecular Weight of Orai1: 38 kDa.

Molecular Weight of glycosylated Orai1: 50 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



Orai1 (P-20): sc-74778. Immunoperoxidase staining of formalin fixed, paraffin-embedded human vulva/anal skin tissue showing cytoplasmic and membrane staining of epidermal cells.

## SELECT PRODUCT CITATIONS

1. Arimilli, S., et al. 2010. Pivotal Advance: nonfunctional lung effectors exhibit decreased calcium mobilization associated with reduced expression of ORAI1. *J. Leukoc. Biol.* 87: 977-988.
2. Liu, H., et al. 2011. Calcium entry via ORAI1 regulates glioblastoma cell proliferation and apoptosis. *Exp. Mol. Pathol.* 91: 753-760.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **Orai1 (G-2): sc-377281**, our highly recommended monoclonal alternative to Orai1 (P-20). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **Orai1 (G-2): sc-377281**.