

# TRPM4 (T-20): sc-27539

## BACKGROUND

Transient receptor potential ion channels (TRPCs) are a superfamily of six transmembrane segment-spanning, gated cation channels. TRPC subtypes mediate store-operated  $Ca^{2+}$  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. TRP ion channels influence calcium-depletion induced calcium influx processes in response to chemo-, mechano- and osmoregulatory events. TRPM4 is a transient receptor potential channel with an intrinsic voltage-sensing mechanism. Voltage dependence of TRPM4 may be functionally important, especially in excitable tissues generating plateau-like or bursting action potentials. TRPM4-mediated depolarization modulates  $Ca^{2+}$  oscillations, with downstream effects on cytokine production in T lymphocytes.

## REFERENCES

- Hoth, M., Fanger, C.M. and Lewis, R.S. 1997. Mitochondrial regulation of store-operated calcium signaling in T lymphocytes. *J. Cell Biol.* 137: 633-648.
- Plant, T.D. and Schaefer, M. 2003. TRPC4 and TRPC5: receptor-operated  $Ca^{2+}$ -permeable nonselective cation channels. *Cell Calcium* 33: 441-450.
- Nilius, B., Prenen, J., Droogmans, G., Voets, T., Vennekens, R., Freichel, M., Wissenbach, U. and Flockerzi, V. 2003. Voltage dependence of the  $Ca^{2+}$ -activated cation channel TRPM4. *J. Biol. Chem.* 278: 30813-30820.
- Launay, P., Cheng, H., Srivatsan, S., Penner, R., Fleig, A. and Kinet, J.P. 2004. TRPM4 regulates calcium oscillations after T cell activation. *Science* 306: 1374-1377.

## CHROMOSOMAL LOCATION

Genetic locus: TRPM4 (human) mapping to 19q13.33; Trpm4 (mouse) mapping to 7 B4.

## SOURCE

TRPM4 (T-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of TRPM4 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-27539 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.

## PROTOCOLS

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

## APPLICATIONS

TRPM4 (T-20) is recommended for detection of TRPM4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], 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).

TRPM4 (T-20) is also recommended for detection of TRPM4 in additional species, including canine and bovine.

Suitable for use as control antibody for TRPM4 siRNA (h): sc-45439, TRPM4 siRNA (m): sc-45440, TRPM4 shRNA Plasmid (h): sc-45439-SH, TRPM4 shRNA Plasmid (m): sc-45440-SH, TRPM4 shRNA (h) Lentiviral Particles: sc-45439-V and TRPM4 shRNA (m) Lentiviral Particles: sc-45440-V.

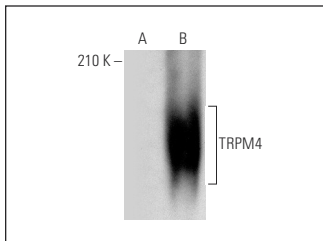
Molecular Weight of TRPM4: 134 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, TRPM4 (m): 293T Lysate: sc-127714 or Jurkat whole cell lysate: sc-2204.

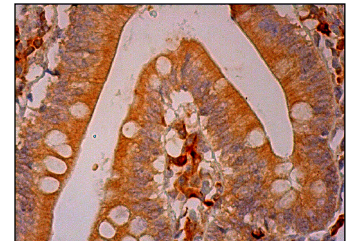
## RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



TRPM4 (T-20): sc-27539. Western blot analysis of TRPM4 expression in non-transfected: sc-117752 (A) and mouse TRPM4 transfected: sc-127714 (B) 293T whole cell lysates.



TRPM4 (T-20): sc-27539. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells.

## RESEARCH USE

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