SANTA CRUZ BIOTECHNOLOGY, INC.

# TRPC4 (C-20): sc-15063

## BACKGROUND

Transient receptor potential cation (TRPC) channels 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. TRPC channels influence calcium-depletion induced calcium influx processes in response to chemo-, mechano- and osmoregulatory events. Human TRPC4 protein, also known as Trp4, functions as a cation channel and is a constituent of native store-operated $Ca^{2+}$-permeable channels. In the presence of elevated $Ca^{2+}$ concentrations, TRPC4 binds Calmodulin (CaM) at an interface which comprises amino acids 688-759 and 786-848 of TRPC4. The ability of TRPC4 to increase inwardly rectifying $K^+$ currents suggests that TRPC4 may contribute to the formation of a novel $K^+$ channel or upregulate endogenous inwardly rectifying $K^+$ channel expression or activity.

## REFERENCES


1. Philipp, S., et al. 1998. A novel capacitative calcium entry channel expressed in excitable cells. EMBO J. 17: 4274-4282.
2. Harteneck, C., et al. 2000. From worm to man: three subfamilies of TRP channels. Trends Neurosci. 23: 159-166.
3. Hofmann, T., et al. 2000. Transient receptor potential channels as molecular substrates of receptor-mediated cation entry. J. Mol. Med. 78: 14-25.
4. McKay, R.R., et al. 2000. Cloning and expression of the human transient receptor potential 4 (TRPC4) gene: localization and functional expression of human TRPC4 and TRPC3. Biochem. J. 351: 735-746.


## CHROMOSOMAL LOCATION

Genetic locus: TRPC4 (human) mapping to 13q13.3; Trpc4 (mouse) mapping to 3 C.

## SOURCE

TRPC4 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of TRPC4 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-15063 P, (100 µg 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 or our catalog for detailed protocols and support products.

## APPLICATIONS

TRPC4 (C-20) is recommended for detection of TRPC4 of human and, to a lesser extent, mouse and rat 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

TRPC4 (C-20) is also recommended for detection of TRPC4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for TRPC4 siRNA (h): sc-42668, TRPC4 siRNA (m): sc-42669, TRPC4 shRNA Plasmid (h): sc-42668-SH, TRPC4 shRNA Plasmid (m): sc-42669-SH, TRPC4 shRNA (h) Lentiviral Particles: sc-42668-V and TRPC4 shRNA (m) Lentiviral Particles: sc-42669-V.

Molecular Weight of TRPC4 isoforms: 112/103/96/95 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.

## SELECT PRODUCT CITATIONS


1. Odell, A., et al. 2005. Epidermal growth factor induces tyrosine phosphorylation, membrane insertion, and activation of transient receptor potential channel 4. J. Biol. Chem. 280: 37974-37987.
2. Sours, S., et al. 2006. Expression of canonical transient receptor potential (TRPC) proteins in human glomerular mesangial cells. Am. J. Physiol. Renal Physiol. 290: F1507-F1515.
3. Odell, A.F., et al. 2008. The spectrin cytoskeleton influences the surface expression and activation of human transient receptor potential channel 4 channels. J. Biol. Chem. 283: 4395-4407.
4. Sánchez-Hernández, Y., et al. 2010. Store-operated $Ca^{2+}$ entry is expressed in human endothelial progenitor cells. Stem Cells Dev. 19: 1967-1981.
5. Björck, H.M., et al. 2012. Characterization of shear-sensitive genes in the normal rat aorta identifies Hand2 as a major flow-responsive transcription factor. PLoS ONE 7: e52227.
6. Rimessi A., et al. 2013. H-Ras-driven tumoral maintenance is sustained through caveolin-1-dependent alterations in calcium signaling. Oncogene. E-Published.


## RESEARCH USE

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