

TRPC4 (A-18): sc-15061

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.
6. Zhang, Z., et al. 2001. Increased inwardly rectifying potassium currents in HEK-293 cells expressing murine transient receptor potential 4. *Biochem. J.* 354: 717-725.
5. Trost, C., et al. 2001. The transient receptor potential, TRPC4, cation channel is a novel member of the family of calmodulin binding proteins. *Biochem. J.* 355: 663-670.

CHROMOSOMAL LOCATION

Genetic locus: TRPC4 (human) mapping to 13q13.3, TRPC5 (human) mapping to Xq23; Trpc4 (mouse) mapping to 3 C, Trpc5 (mouse) mapping to X F2.

SOURCE

TRPC4 (A-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of TRPC4 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-15061 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

TRPC4 (A-18) is recommended for detection of TRPC4 and, to a lesser extent, TRPC5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], 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 (A-18) is also recommended for detection of TRPC4 and, to a lesser extent, TRPC5 in additional species, including equine, canine, bovine, porcine and avian.

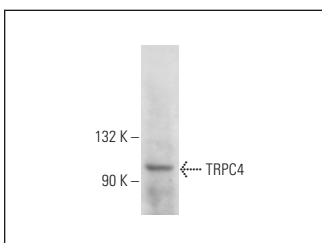
Molecular Weight of TRPC4 isoforms: 112/103/96/95 kDa.

Positive Controls: mouse heart extract: sc-2254

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.

DATA



TRPC4 (A-18): sc-15061. Western blot analysis of TRPC4 expression in mouse heart tissue extract.

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.