

TRPC4/5 (H-80): sc-28760

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. The human TRPC5 protein is specifically expressed in brain and forms a nonselective cation channel with TRPC1 in the hippocampus that is activated by G_q -coupled receptors, but not by depletion of intracellular Ca^{2+} stores.

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 (TRP4) gene: localization and functional expression of human TRP4 and TRP3. *Biochem. J.* 351: 735-746.
5. 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.
6. Trost, C., et al. 2001. The transient receptor potential, TRP4, 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

TRPC4/5 (H-80) is a rabbit polyclonal antibody raised against amino acids 1-80 mapping within an N-terminal cytoplasmic domain of TRPC5 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.

APPLICATIONS

TRPC4/5 (H-80) is recommended for detection of TRPC4 and TRPC5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μg per 100-500 μg 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).

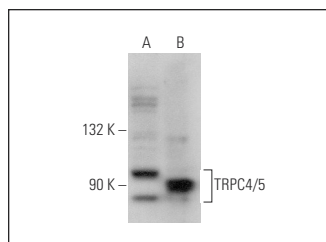
TRPC4/5 (H-80) is also recommended for detection of TRPC4 and TRPC5 in additional species, including equine, canine, bovine, porcine and avian.

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

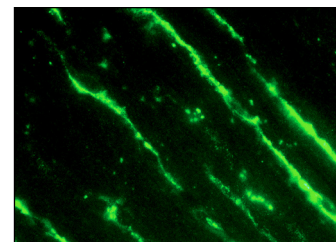
Molecular Weight of TRPC5: 112 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206 or mouse cerebellum extract: sc-2403.

DATA



TRPC4/5 (H-80): sc-28760. Western blot analysis of TRPC4/5 expression in MCF7 whole cell lysate (A) and mouse cerebellum tissue extract (B).



TRPC4/5 (H-80): sc-28760. Immunofluorescence staining of normal mouse heart frozen section showing membrane staining.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

MONOS
Satisfaction
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Try **TRPC5 (1C8): sc-293259**, our highly recommended monoclonal alternative to TRPC4/5 (H-80).