SANTA CRUZ BIOTECHNOLOGY, INC.

TRPC5 (C-17): sc-18737

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The Power to Question

BACKGROUND

Transient receptor potential (TRP) ion channels are a superfamily of six transmembrane segment-spanning, gated cation channels. TRP 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. Human TRP1 protein is a 793 amino acid cation channel that is expressed in fetal and adult brain and in adult heart, testis and ovary, where it may influence store-operated Ca^{2+} entry as a component of capacitative calcium entry (CCE) complexes. The brain-specific subunit TRP5 forms a nonselective cation channel with TRP1 in the hippocampus that is activated by G_q-coupled receptors, but not by depletion of intracellular Ca^{2+} stores. The gene encoding human TRP5 maps to chromosome Xp23, which also contains loci for nonsyndromic mental retardation and X-linked disorders.

REFERENCES

1. Zhu, X., et al. 1995. Molecular cloning of a widely expressed human homologue for the *Drosophila* TRP gene. FEBS Lett. 373: 193-198.
2. Wes, P.D., et al. 1995. TRPC1, a human homolog of a *Drosophila* store-operated channel. Proc. Natl. Acad. Sci. USA 92: 9652-9666.
3. Zitt, C., et al. 1996. Cloning and functional expression of a human Ca^{2+}-permeable cation channel activated by calcium store depletion. Neuron 16: 1189-1196.
4. Philipp, S., et al. 1998. A novel capacitative calcium entry channel expressed in excitable cells. EMBO J. 17: 4274-4282.
5. Sossey-Alaoui, K., et al. 1999. Molecular cloning and characterization of TRPC5 (HTRP5), the human homologue of a mouse brain receptor-activated capacitative Ca^{2+} entry channel. Genomics 60: 330-340.
6. Harteneck, C., et al. 2000. From worm to man: three subfamilies of TRP channels. Trends Neurosci. 23: 159-166.
7. Hofmann, T., et al. 2000. Transient receptor potential channels as molecular substrates of receptor-mediated cation entry. J. Mol. Med. 78: 14-25.
8. Strubing, C., et al. 2001. TRPC1 and TRPC5 form a novel cation channel in mammalian brain. Neuron 29: 645-655.

CHROMOSOMAL LOCATION

Genetic locus: TRPC5 (human) mapping to Xq23; Trpc5 (mouse) mapping to X F2.

SOURCE

TRPC5 (C-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of TRPC5 of human origin.

STORAGE

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

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-18737 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TRPC5 (C-17) is recommended for detection of TRPC5 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

TRPC5 (C-17) is also recommended for detection of TRPC5 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for TRPC5 siRNA (h): sc-42670, TRPC5 siRNA (m): sc-42671, TRPC5 shRNA Plasmid (h): sc-42670-SH, TRPC5 shRNA Plasmid (m): sc-42671-SH, TRPC5 shRNA (h) Lentiviral Particles: sc-42670-V and TRPC5 shRNA (m) Lentiviral Particles: sc-42671-V.

Molecular Weight of TRPC5: 112 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201.

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. Antoniotti, S., et al. 2006. Interaction between TRPC channel subunits in endothelial cells. J. Recept. Signal Transduct. Res. 26: 225-240.
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.

RESEARCH USE

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