SANTA CRUZ BIOTECHNOLOGY, INC.

TRPC5 (1C8): sc-293259

SANTA CRUZ BIOTECHNOLOGY

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.

CHROMOSOMAL LOCATION

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

SOURCE

TRPC5 (1C8) is a mouse monoclonal antibody raised against a partial recombinant protein corresponding to amino acids 534-603 of TRPC5 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

TRPC5 (1C8) 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), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

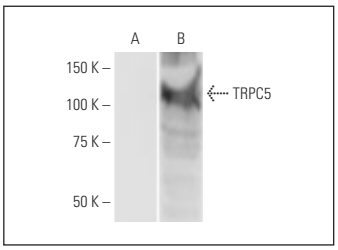
Molecular Weight of TRPC5: 112 kDa.

Positive Controls: TRPC5 transfected 293T whole cell lysate.

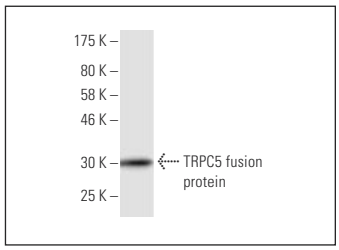
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



TRPC5 (1C8): sc-293259. Western blot analysis of TRPC5 expression in non-transfected (**A**) and TRPC5 transfected (**B**) 293T whole cell lysates.



TRPC5 (1C8): sc-293259. Western blot analysis of human recombinant TRPC5 fusion protein.

SELECT PRODUCT CITATIONS

1. Zhu, G., et al. 2018. Expression of TRPC5 is decreased in the sperm of patients with varicocele-associated asthenozoospermia. Biomed. Rep. 8: 529-534.
2. Amores-Bonet, L., et al. 2022. Interactions between the polysialylated neural cell adhesion molecule and the transient receptor potential canonical channels 1, 4, and 5 induce entry of Ca^{2+} into neurons. Int. J. Mol. Sci. 23: 10027.
3. Zhang, W., et al. 2023. Long-term treatment with gadopentetic acid or gadodiamide increases TRPC5 expression and decreases adriamycin nuclear accumulation in breast cancer cells. Cells 12: 1304.

RESEARCH USE

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