

TPCN1 (C-14): sc-67973



The Power to Question

BACKGROUND

TPCN1 (2 pore segment channel 1), also known as TPC1, is a widely expressed, 816 amino acid voltage-gated cation channel protein with predominant expression in lung, liver, heart and kidney. In the kidney, TPCN1 localizes to the inner medullary collecting ducts. In contrast with the distantly related four-domain voltage-gated calcium and sodium channels and the more closely related four-domain ion transport protein located on the surface of sperm cells (CatSper), TPCN1 is a two-domain channel. Similar to the four-domain channel structure, each of the two homologous domains that comprise TPCN1 contains six transmembrane segments (S1-S6) with a pore loop between S5 and S6 and a voltage sensor segment that is positively charged. TPCN1 has hydrophilic N- and C-termini that localize to the cytoplasm.

REFERENCES

1. Ishibashi, K., Suzuki, M. and Imai, M. 2000. Molecular cloning of a novel form (two-repeat) protein related to voltage-gated sodium and calcium channels. *Biochem. Biophys. Res. Commun.* 270: 370-376.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609666. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Clapham, D.E. and Garbers, D.L. 2005. International union of pharmacology. L. nomenclature and structure-function relationships of CatSper and two-pore channels. *Pharmacol. Rev.* 57: 451-454.
4. Peiter, E., Maathuis, F.J., Mills, L.N., Knight, H., Pelloux, J., Hetherington, A.M. and Sanders, D. 2005. The vacuolar Ca²⁺-activated channel TPC1 regulates germination and stomatal movement. *Nature* 434: 404-408.

CHROMOSOMAL LOCATION

Genetic locus: TPCN1 (human) mapping to 12q24.13; Tpcn1 (mouse) mapping to 5 F.

SOURCE

TPCN1 (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of TPCN1 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-67973 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.

RESEARCH USE

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

APPLICATIONS

TPCN1 (C-14) is recommended for detection of TPCN1 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

TPCN1 (C-14) is also recommended for detection of TPCN1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for TPCN1 siRNA (h): sc-63141, TPCN1 siRNA (m): sc-63142, TPCN1 shRNA Plasmid (h): sc-63141-SH, TPCN1 shRNA Plasmid (m): sc-63142-SH, TPCN1 shRNA (h) Lentiviral Particles: sc-63141-V and TPCN1 shRNA (m) Lentiviral Particles: sc-63142-V.

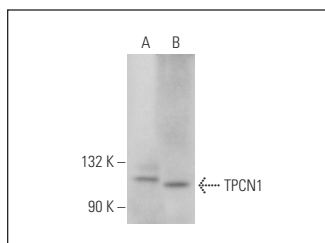
Molecular Weight of TPCN1: 95 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

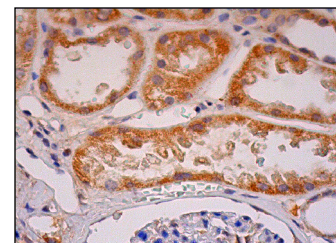
RECOMMENDED SECONDARY REAGENTS

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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



TPCN1 (C-14): sc-67973. Western blot analysis of TPCN1 expression in HeLa (A) and Jurkat (B) whole cell lysates.



TPCN1 (C-14): sc-67973. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules.

SELECT PRODUCT CITATIONS

1. Arndt, L., Castonguay, J., Arlt, E., Meyer, D., Hassan, S., Borth, H., Zierler, S., Wennemuth, G., Breit, A., Biel, M., Wahl-Schott, C., Gudermann, T., Klugbauer, N. and Boekhoff, I. 2014. NAADP and the two-pore channel protein 1 participate in the acrosome reaction in mammalian spermatozoa. *Mol. Biol. Cell* 25: 948-964.