

PCLN-1 (P-14): sc-10178

BACKGROUND

Tight junctions mediate the regulation of the paracellular pathway between epithelial and endothelial cells. They form close connections to eliminate the extracellular space and regulate the flow of solutes between cells. The human gene PCLN-1 (paracellin-1) is related to the claudin family of integral membrane proteins, which localize to tight junctions. PCLN-1 contains four trans-membrane domains and intracellular amino and carboxy termini, characteristic of the other claudin family members, and is detected only at the tight junctions of kidney tissue. PCLN-1 forms an intercellular pore and controls the resorption of magnesium and calcium in the thick ascending limb of Henle (TAL). Mutations in PCLN-1 cause renal magnesium wasting, which may contribute to a rare autosomal recessive disease, renal hypomagnesemia with hypercalciuria and nephrocalcinosis.

REFERENCES

1. de Rouffignac, C., et al. 1994. Renal magnesium handling and its hormonal control. *Physiol. Rev.* 72: 305-322.
2. Anderson, J.M., et al. 1995. Tight junctions and the molecular basis for regulation of paracellular permeability. *Am. J. Physiol.* 269: G467-G475.
3. Kelepouris, E., et al. 1998. Hypomagnesemia: renal magnesium handling. *Semin. Nephrol.* 18: 56-73.
4. Madara, J.L. 1998. Regulation of the movement of solutes across tight junctions. *Annu. Rev. Physiol.* 60: 143-159.
5. Wong, V., et al. 1999. Paracellular Channels! *Science* 285: 62.
6. Simon, D.B., et al. 1999. Paracellin-1, a renal tight junction protein required for paracellular Mg²⁺ resorption. *Science* 285: 103-106.
7. Furuse, M., et al. 1999. Manner of interaction of heterogeneous claudin species within and between tight junction strands. *J. Cell Biol.* 147: 891-903.
8. Kubota, K., et al. 1999. Ca²⁺-independent cell-adhesion activity of claudins, a family of integral membrane proteins localized at tight junctions. *Curr. Biol.* 9: 1035-1038.
9. Morita, K., et al. 1999. Claudin multigene family encoding four-transmembrane domain protein components of tight junction strands. *Proc. Natl. Acad. Sci. USA* 96: 511-516.

CHROMOSOMAL LOCATION

Genetic locus: CLDN16 (human) mapping to 3q28.

SOURCE

PCLN-1 (P-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of PCLN-1 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-10178 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PCLN-1 (P-14) is recommended for detection of PCLN-1 of 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).

Suitable for use as control antibody for PCLN-1 siRNA (h): sc-42588, PCLN-1 shRNA Plasmid (h): sc-42588-SH and PCLN-1 shRNA (h) Lentiviral Particles: sc-42588-V.

Molecular Weight of PCLN-1: 36 kDa.

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. Martin, T.A., et al. 2008. Claudin-16 reduces the aggressive behavior of human breast cancer cells. *J. Cell. Biochem.* 105: 41-52.
2. Martin, T.A., et al. 2011. Claudin-16/paracellin-1, cloning, expression, and its role in tight junction functions in cancer and endothelial cells. *Methods Mol. Biol.* 762: 383-407.
3. Men, W., et al. 2015. Expression of claudins in human clear cell renal cell carcinoma. *Cancer Genomics Proteomics* 12: 1-8.

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.