SANTA CRUZ BIOTECHNOLOGY, INC.

PCLN-1 (K-14): sc-10179

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 transmembrane 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 molcular 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. Simon, D.B., et al. 1999. Paracellin-1, a renal tight junction protein required for paracellular Mg^{2+} resorption. Science 285: 103-106.
6. Furuse, M., et al. 1999. Manner of interaction of heterogeneous claudin species within and between tight junction strands. J. Cell Biol. 147: 891-903.

CHROMOSOMAL LOCATION

Genetic locus: CLDN16 (human) mapping to 3q28; Cldn16 (mouse) mapping to 16 B2.

SOURCE

PCLN-1 (K-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-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-10179 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

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

PCLN-1 (K-14) is also recommended for detection of PCLN-1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PCLN-1 siRNA (h): sc-42588, PCLN-1 siRNA (m): sc-42589, PCLN-1 shRNA Plasmid (h): sc-42588-SH, PCLN-1 shRNA Plasmid (m): sc-42589-SH, PCLN-1 shRNA (h) Lentiviral Particles: sc-42588-V and PCLN-1 shRNA (m) Lentiviral Particles: sc-42589-V.

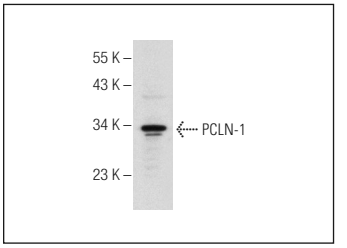
Molecular Weight of PCLN-1: 36 kDa.

Positive Controls: Hep G2 Cell Lysate: sc-2227.

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.

DATA



PCLN-1 (K-14): sc-10179. Western blot analysis of PCLN-1 expression in Hep G2 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Ikari, A., et al. 2004. Association of paracellin-1 with ZO-1 augments the reabsorption of divalent cations in renal epithelial cells. J. Biol. Chem. 279: 54826-54832.
2. Wongdee, K., et al. 2008. Osteoblasts express claudins and tight junction-associated proteins. Histochem. Cell Biol. 130: 79-90.

PROTOCOLS

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